

No. 316.--VOL. XI.]

**LONDON: SATURDAY, SEPTEMBER 11, 1841.**

[PRICE 6D.]

**TO BE SOLD, BY PRIVATE CONTRACT, at the NORTH**  
**WHEAL ALFRED MINES, near Hayle, Cornwall,** one such cylinder STEAM  
 PUMPING-ENGINE, with three cylinders, and one such engine has  
 just been ordered from the most beautiful and efficient pieces  
 of machinery ever manufactured by Messrs. Sauty, Carre, and Vivian, on whose  
 land it is now erected. The stroke in cylinder is 9 feet, and in shaft 8 feet; the  
 well-work is of brass—Applications to be made to the purser, Mr. William Yaw-  
 ley, at the above mine, or to the undersigned. The price may be known by applying  
 to the agent, Mr. James G. Gray, Farnley, Cornwall.

Also, the whole of the MINING MATERIALS on the above mine WILL BE SOLD, BY PUBLIC AUCTION, on Friday, the 17th day of September next, the sale to commence by Ten o'clock in the forenoon, comprising—

- 7 3-foot 12-inch pumps.  
 12 3-foot 12-inch ditto.  
 2 9-foot 10-inch ditto.  
 12 9-foot 7-inch ditto.  
 1 14-inch plunger pole, } with stuffing-boxes, glands, &c pieces, top door pieces,  
 1 10-inch ditto, } cases, &c., complete.  
 4 9-inch windbores, 9 feet long.  
 2 6-inch ditto, ditto.  
 1 12-inch working barrel, 10 feet long.  
 1 11-inch ditto, ditto.  
 3 8-inch ditto, ditto.  
 2 6-inch ditto, ditto.  
 4 9-inch door pieces.  
 2 6-inch ditto.  
 1 large capstan.  
 2 small ditto.  
 1 large shears and thieves complete.  
 2 small ditto ditto.  
 120 fathoms 12-inch capstan rope, nearly new.  
 50 fathoms 104-inch ditto, ditto.  
 100 fathoms 74-inch ditto, ditto.  
 3 heavy whips.  
 3 balance bobs, complete.  
 1 V bob, ditto.  
 13 14-inch main rod, 60 feet, }  
 3 13-inch ditto, ditto, } with sagged strapping plates, bolts, pins, &c.  
 2 12-inch ditto, ditto, }  
 70 fathoms 2-inch round iron rods.  
 20 fathoms 14-inch ditto.  
 30 fathoms 10-inch ditto, with pendulums, &c.  
 13 2-foot iron shivers, with stands for rods.  
 200 fathoms of 7 and 6-inch leanders, boll, and stands.  
 1 42-inch smith's bellows.  
 1 36-inch ditto, nearly new.  
 Smiths' and miners' tools, 2 anvils, large quantity of slanch bolts, bars, &c.; 1 lot of good whim chain, whim kibbles; sundry lots of useful iron, ditto scrap and cast;  
 2 large capstan shivers, screw tackle and stocks, sundry roofs, sheds, doors, &c.;  
 sundry lots of useful timber of various sorts and sizes, 100 fathoms of good leaders, 1 large mandril, with various other mining materials, the whole of which have not been in work above three years, and are of the best possible description, and well worthy the attention of the public.  
 For any further particulars application to be made to Captain Reynolds, at the mine; or to Mr. A. J. Ashwin, settlemaster, &c., Hayle, Cornwall.  
 August 20, 1841.

**TO ENGINEERS, FOUNDERS, MACHINE MAKERS, STEAM-SHIP BUILDERS,  
AND OTHERS.**

**FOR SALE, an extensive and valuable MANUFACTORY, for**  
the construction of **STEAM-ENGINE, BOILERS, GENERAL MACHINERY, CHAIN CABLES, ANVILS, FOUNDRY GOODS, POLED GOODS, AND GENERAL CASTINGS.** Of these works, the **FOOTDRILL IRON WORKS, Aberdeen.**—These works occupy nearly four acres of freehold ground, at a very moderate fee-duty of ground-rent, and are situated at Footdrill, in the populous city of Aberdeen, within 500 yards of the Harbour quay. The engines, boilers, and machinery of several of the large class of steam-ships have been wholly constructed and fitted up at these works, which afford unusual facilities to parties engaging in the construction of steamships, and to the general commerce of Great Britain and the Kingdom. The foreign and coasting trade of the port of Aberdeen is very extensive, and has rapidly increased for several years past, whilst the steam trade to London, Hull, Leth, Inverness, Orkney, Shetland, &c., is carried on to a very considerable extent.

Immediately adjoining the iron-works, and belonging to the same proprietors, is a large extensive **DOCK, SAIL, and FELT WORK,** which will sell as DISPOSED OF, or either with or without the iron-works as may be agreed upon. To a party desirous of engaging in the building and equipping of steam or sailing vessels, the construction and repairing of steam-engines, sugar mills, and general machinery, these works, from their local situation and peculiar facilities within themselves, will be found particularly well adapted. The whole of the buildings are substantial, commodious, and suitable for the respective trades carried on within them. The managers in the above lines, and of the works, are the most experienced and efficient at considerable expense. In the meantime, the work will continue to be carried on in all its branches, and orders executed as usual.

A plan and specification of the premises have been printed, which may, with all particulars and further information upon the subject, be had upon application to Messrs. Johnston and Farquhar, solicitors, London; John Jopp, Esq., W.S., Edinburgh; or Messrs. Jopp and Shand, advocates, Aberdeen, in whose hands the title-deeds of the property are.

**TO BE LET.**—The rapid extension of the Iron Trade in Lanarkshire has led several proprietors in the east of Scotland to examine their estates, to ascertain if ironstone be so abundant therein as to justify iron works being established. One of the first made of Dryden, the property of George Mercer, Esq., where **TWO SEAMS OF BLACKBAND IRONSTONE**, of good quality and workable thickness, have been opened up, by two mines being carried into the ironstone to some distance. There is a good colliery on the estate, at which abundance of coal can be consumed, and there is good limestone, freestone, and fire clay, and a supply of water. It is believed that the extent of ironstone, in the estate of Dryden, and the immediate supply of coal that can be obtained, would justify the establishment of a large iron-works, and as the prospect is well worthy the attention and inquiry of parties contemplating entering into the iron trade, to whom encouraging terms will be allowed, and it may be added, that as the ironstones are understood to pass satisfactorily into bands, in some of which they are yet left, by securing these also, an iron-works, at or near Dryden, might be much estimated. The mineral field of Dryden is about six miles from Edinburgh and eight miles from the shipping port of Leith. The blackband ironstone will be found in the following strata, and in the following quantities:—No. 1, 47 to 53 per cent. of iron; No. 2, 53 to 55 ditto. An iron-works on the east coast of Scotland would command a very considerable home and local sale for pig-iron, being nearest the London, Hull, Newcastle, and Dundee markets; and it may be safely assumed, that compared with Lanarkshire iron sent to those markets, a material saving would arise on the carriage department.

The mine of Dryden will be given up on application to the proprietor, at Dryden House, where Messrs. Wether & Melville, the principal iron-works of Scotland, Messrs. Girdle, mining engineers, Albany street, Edinburgh, may be consulted as to conditions of lease.—Dryden House, Aug. 31.

TO THE IRON TRADE.—EXTENSIVE MINERAL FIELDS IN THE COUNTY OF Ayr, SCOTLAND.

**TO LET, several HUNDRED ACRES of IRONSTONE.**  
Consisting of BLACKBAND, and various seams of CLAYBANDS. The blackband has a freestone roof, and a bilzle boiling, and is of unusual thickness, and very rich quality. Several seams of coal lie with the ironstone, and in the immediate neighbourhood there is abundance of coal, and, after some time, at present working for country use. The blackband, sand, and lime, run, for many years, be worked level sea, without sinking pits, and without machinery. There is good drainage, plenty of water, and every convenience can be had if required, and wood is abundant in the neighbourhood. The ironstone is of the best quality, and is highly valued at a locality that will accommodate a blast at the present price of iron—the property is sold and fall with the price of pig-iron.—Apply to Sir James Bowdler, Bart., Anstruther, Wickburgh, North Britain.

**TO BE LET, ON LEASE, AN ELIGIBLE COLLIERY.**

producing coal used for domestic purposes; the COAL FIELD extends for miles of two or three miles, all unworked, lying under about 100 acres of land, in a ring fence. The pit, which has been lately sunk with a view to opening this coal field, is nearly ready for working coal; it is situated within two miles of the Llanelli Harbour, and there is a railway connecting the colliery with the harbour, and the shipping wharves. This coal may also be worked by level, and the level is the most economical. This taking presents many advantages to capitalists, worthy of immediate consideration—the principal expense of winning the coal being already incurred, and capital and other materials being now on the spot ready for work, which may be taken at a valuation, at the tenant's option. The paid was a coach's shop, and all other requisites suitable for carrying on this colliery. An excellent stone quarry, and good fire clay stone may be worked on the same lands.

For particulars, send to trust, apply to Messrs. Hallen, Robinson, and Wynn, 14, Old Bailey, London, or to the Llanelli Coal and Iron Co. of the colliery, which may be seen, or to Mr. Benjamin Jones, millwright and land agent, Llanelli, who will show the premises.—Llanelli, August, 1841.

TO MINERS.  
**W**ANTED, by a gentleman of great experience in MINING  
and SMELTING, a SITUATION as SUPERINTENDENT.—Address "John  
Wilkinson," Post-office, Newcastle upon-Tyne.

**TO BRITISH AND FOREIGN MINING COMPANIES**

**WANTED.—A MINING MECHANIC**, aged thirty-two years, who has been ten years engaged under two different companies in the mines of Brazil, can speak the Portuguese language fluently, understands the mining carpentry in all its branches, and has an elementary knowledge of coping, turning of wood or iron, wheel and millwright's work, pattern making, &c., wishes to OBTAIN A SITUATION as head mechanic, or in any way his employers may think fit. He is a man of good character, and of good habits. Address (if post-paid) "T. R. B." at Mr. Trevelian, No. 54, St. Nicholas street, Truro, Cornwall.

**BOLIVAR MINING ASSOCIATION.**—Notice is hereby given, that an **ADJOURNED GENERAL MEETING** of the proprietors of the Bolivar Mining Association will be held at the office of the association, No. 9, Warfield court, Thornamton street, in the city of London, on Tuesday, the 31th day of September instant, at Eleven for Twelve o'clock precisely, pursuant to adjournment on the 31st day of August last.

And notice is hereby also given, that, immediately after the said meeting, a **SPECIAL GENERAL MEETING** of the proprietors of the above-named association will be held, for the purpose of considering and adopting any resolution which may be deemed necessary and convenient in consequence of the communications to be made at the adjourned meeting aforesaid.

ALEXANDER ALLEN, Sec.

Dated this 30th day of September.

**BLAENAVON IRON AND COAL COMPANY.**—Notice is hereby given, that the board of directors have this day made a CALL of FIVE POUNDS per share upon the old shares of this company, payable on or before the 15th inst. and that the said directors have also required the said shares to be paid up into the hands of the bankers of the company, viz., Messrs. Masters, Peters, and Co., London; Messrs. Bailey and Co., Abercromby; Messrs. Bate and Rhine, Manchester; and Messrs. A. Heywood and Sons, Liverpool. By order of the board,  
BRYN & CO.,  
Blauavon offices, 4, FENCIBLE LANE, LONDON, E.C. 4.  
RICHARD JOHNSON, Secy.

**GREAT WHEEL CHARLOTTE MINING ASSOCIATION.**  
—The directors hereby give notice, that the HALF YEARLY GENERAL MEETING of this association will be held at the George and Vulliamz Taverns, Cornhill, on Wednesday, the 25th inst., at two o'clock precisely.—N.B. The new shares will be ready for delivery on and after Tuesday, the 7th inst.  
16, LAWRENCE POUNDRY HILL, SEAT 3.

**NATIONAL BRAZILIAN MINING ASSOCIATION.**—Pursuant to a resolution passed at the Special General Meeting of the shareholders of this association, the directors propose to BORROW, for the term of two years, the SUM OF TWENTY-FIVE THOUSAND POUNDS, on the security named in the report, a copy of which may be obtained at this office, where every information on the subject will be afforded.

The directors will use BONDs in sums of not less than \$750 each, bearing interest at the rate of 3 per cent. per annum, payable half-yearly, the first payment to commence on the 15th of March, 1842, and at the expiration of the two years—viz., on the 15th of September, 1843, the principal will be repaid with a bonus of 15 per cent. on the amount of the same. The instalments to be paid as follow:—On the 15th of Sept., 1841, 25 per cent.; 15th Dec., 1841, 25 per cent.; 15th March, 1842, 25 per cent.; 15th June, 1842, 25 per cent.

Applications for the loan of money, to be made to the secretary of the company, stating the amount required. A preference will be given, in the first instance, to the shareholders of the association, after which they will be distributed pro rata among the applicants, according to the dates of their respective applications.

By order of the board,  
 26, Throgmorton street, September 5. WILLIAM MARINER, Sec.  
 N.B.—Application for reports may also be made and every information obtained  
 from Messrs. Willis, Hower, and Willis, solicitors, 5, Tokenhouse-yard.

**SOUTH CARADON MINE.**--A General Meeting of the shareholders in this mine was held at the mine, on Tuesday, the 21st ult., pursuant to notice, when a DIVIDEND OF TWENTY POUNDS per share was declared, and now payable, either at the mine, or at the East Cornwall Bank, Liskeard.

THOMAS KITLOW, Purser.

Dated South Caradon Mine, St. Cleer, near Liskeard, Cornwall, Sept. 2.

**THE MINERS' COMPANY.**—The Court of Assistants of the Government and Company of Copper Miners in England hereby give notice, that they have this day made a CALL of TEN POUNDS per share on those shares the holders of which have not already advanced themselves the sum of paying up their full share, and that they have appointed the 14th of October next, for the meeting of the Court of Assistants, at the Bank of England, in the City of London, at the banking-house of Messrs. Glyn, Hallifax, Mills, and Co., Lombard street, or at the offices of the Company, Old Broad street.

Office of the Government and Company of Copper Miners in England,  
Old Broad street, London E.C. 4.

**THE MINERS' COMPANY.**—The court of assistants of the Governor and Company of Copper Mines in England hereby give notice, that they will **SELL**, on Thursday, the 11th day of October now next ensuing, at their Office, in Old Broad-street, five TONS of **BRITISH GRAIN, REFINED,** and **SAFETY MATCHES**, in and by the said Company, and have been deposited for sale, deliverable from their warehouses in London, Liverpool, and Bristol, or from their smelting works at Penzance and Truro. The sale to commence at Twelve o'clock precisely. Catalogues will be issued in due time, containing particulars and conditions of sale, which will be delivered on and after the 11th day of September next, to all who apply to the company's brokers, Messrs. Short and Johnson, 1, Newmarket-place, Cornhill.

N.B.—The company binds itself not to make sales of tin during the quarter beyond the quantity advertised.

**ANDREW SMITH'S PATENT WIRE ROPES**, for standing rigging, lighting conductors, steepling of blocks, mining, railway, and general purposes; about half the size and weight of common ropes, and 20 per cent. cheaper. Testimonials to their effect, with specimens, may be seen, and every information obtained, at the office, 74, Old Broad-street, city. 19, Princess-street, London-square; manufactory, Mill-wall, Poplar; and also of the following agents:-

Robertson and Co., 12, Gower Place	Liverpool.
Mathias Dunn	Newcastle-on-Tyne.
Joseph Bothway	Plymouth.
John Thompson and Co.	Wigan.
J. T. Freggall	Truro.
Thomas Money and Son.	Bristol.
Petrie and Nield.	Wolverhampton.
Coades and Young	Salford.
James Kibbie and Co.	Glasgow.
James Gunn	Leith.
J. M. Beatts, Clements's Lane, High Street.	Dundee.

ANDREW SMITH'S PATENT WIRE ROPE.

This rope has been in use for standing rigging in her Majesty's Navy, and in a great number of merchant vessels, for upwards of six years, and is giving the highest satisfaction; the rope is also employed in various mines and railways in different parts of the Kingdom, but reference is particularly made to the Blackwall Railroad, where its capabilities have been most severely tested, for although it has been in use upwards of twelve months it has never broken, and continues to give entire satisfaction. — *Full following extract from directors' report at late meeting of proprietors.*

"The adoption of the wire rope has been attended with complete success; it has never broken, although some portions have been in use for twelve months. In striking the whole line with wire rope, care has been deemed necessary in watching the effects produced upon it, and the engineers have therefore advised that it should be removed gradually, and they are satisfied that as long the hemp rope will wholly removed from the line, enough to be as a small portion may be required after the necessary elasticity is restored to the line, when this is accomplished, the reduction in the annual expenditure, as compared with the hemp rope, will be effected."

**THE PATENT SAFETY FUSE.**  
FOR STARTING ROCKS IN MINES, GUARRIES, AND FOR SUBMACHINE  
GREATINGS.—This article offers the safest, cheapest, and most expeditious  
method of effecting this very hazardous operation. From many testimonials to the  
contrary, with which the Manufacturers have been furnished from every part of  
the United States, they submit the following letter, recently received from John Taylor,  
F.R.S., &c., &c., &c.  
"I am very glad to hear that your recommendations have been of any service to  
me. They have been given from a thorough conviction of the great usefulness of  
Safety Fuse, and I am quite willing that you should occupy any name as an  
author of this  
subject, and will be by the Patents, HICKFORD, WHITE, and BAYLY,  
London, G.W.S.W."

**VALE OF NEATH AND SOUTH WALES BREWERY.**—  
Capital £125,000, in 6250 shares of £20 each. Dividends payable 10th April  
and 10th October. Deposit £2 per share.

DIRECTORS.

Joseph Stancome, Esq., William Brunton, Esq., W. H. Buckland, Esq.	George Walters, Esq., John White Little, Esq., Joseph Rusher, Esq.
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The increasing demand for the Vale of Neath and North, both for home consumption and export, induces the directors to make a further issue of shares, in addition to the present subscribed capital of £20,000. Subscribers for shares may either participate in the current profits rateably with the original shareholders, or take a fixed and limited dividend of 8 per cent. per annum. The option to be stipulated at the time of subscribing. The deposit of £3 per share to be paid on allotment, the remaining amount of £17 per share may be paid promptly, or by three equal instalments, at intervals of three months. Subscribers will be entitled to the benefit of the dividends from time to time.

Information relative to the trade and prospects of the concern will be furnished by the directors, at the Vale of Neath Brewery, Neath, Glamorganshire, to whom applications for shares may be made, or to Mr. G. W. W. Mason, 35, Bucklebury, London.

## IMPROVEMENT IN THE MANUFACTURE OF IRON.

REPORT OF THE FURNACES AND STOVES OF THE MANUFACTORY OF  
WASSERKALFINGEN, WORKED BY GAS.  
BY M. H. SCHÖNBERG.  
[Read before the Academy of Sciences, Paris, on the 23d ult.]

When we endeavour to include in one *chap d'ail* the progress that has hitherto been made in the manufacture of iron, we feel great satisfaction in reflecting on the success which this important branch of industry has attained, and the wonderful effects which have resulted from the aid it has received from science since the commencement of the present century. The numerous efforts that have been made by the ironmasters, and the proprietors of iron foundries, to diminish the expenses of manufacture, by economy in the materials, are remarkable; and most particularly the attempts of every description, that have been made to economise fuel,

It is with reference to this object that in blast-furnaces, and in refinery stoves, successive trials have been made of charcoal, coke, of charred wood, coal, and even of anthracite and turf; and that a new mode has thus been introduced of removing the difficulties consequent to the manufacture, and of diminishing the expenses which attend its production. Subsequently were introduced, the application of heated air, the application of the flame from the mouth of the chimney of blast-furnaces to various purposes, and an infinity of other valuable inventions.

The most important of all these improvements is, perhaps, the one for which we are indebted to M. de Faber, director of the iron manufactures of Wasserthalen, in Wurtemberg, who has been successful in his attempts to collect before it issues from the mouth of the chimney, the gas which is generated in blast-furnaces, and which forms the flame that thus escapes, and of applying it as a combustible in refinery stoves, and in puddling and oxidizing furnaces.

The application of the flame issuing from the mouth of the chimney to different purposes, such as heating the air to be forced into the blast-furnaces, burning lime, roasting the ore, making coke, heating steam-boilers, &c., has been known for seven or eight years; yet in all these cases it has been found impossible to produce with this flame a temperature exceeding red heat, which has imposed limits to this method of application, whilst the method of M. de Faber is calculated to produce the highest temperature that can be required in making iron.

The principal method by which this process is characterized, is the following manner of burning the gas, with the introduction of atmospheric air forced through bellows, and in the ingenious construction of the stoves and furnaces. The conclusions which have been arrived at after many years experience may, without exaggeration, be considered wonderful, and the discovery to which we allude has introduced a new era in the manufacture of iron quite as remarkable as that for which practical mechanics is indebted to the steam-engine. At Wasseraffenberg there are at the present time three furnaces or stoves, worked only by escaped gas, in active operation. It is to the blast-furnace from the south, introduced into this establishment, that the requisite quantity of gas is extracted for heating a remaining-furnace. The application of this method is very simple, and is effected by introducing a tube to a certain depth into the chimney of the blast-furnace. It seems that by this means there is obtained at most one-sixth or one-fifth of the total quantity of gas produced, and which escapes from this furnace, and it is certain that, notwithstanding this subtraction, there is scarcely any perceptible diminution in the flame which issues from the mouth of the chimney.

The refining furnace produces about 175 metrical quintals of fine metal weekly, which is always of a beautifully white colour, like silver. The method of refining in this gas furnace is brought to such a high degree of perfection, that the iron always runs from it, in a great degree, decarburized, and it is freed from all impurities, such, among others, from phosphorus and sulphur. The waste, which in the English refining-furnaces worked by coke is never less than from 5 to 10 per cent., when the furnace is in good order, never exceeds from 1 to 2 per cent. Neither must the circumstance be forgotten, that the cast-iron passed through the refining-furnace usually only consists of fragments from the foundry, which, as is known, contain a considerable quantity of sand adhering to them from the moulds. The whole operation is so well regulated, and all is conducted with so much uniformity, that there is little liability to these uncertainties and losses which are only too common in the refining-furnaces generally used. • The expenses of manual labour are also equally small.

The results of puddling with gas, have not been attended with less satisfactory results. The puddling-furnace, which has been constructed at Assemlingen, and which is in operation there, uses the same gas as the hot-furnaces of the north. In the chimney of this one, two suction pipes are introduced to a suitable depth; by means of these a sufficient quantity of gas can be collected to keep a puddling-furnace and a reverberatory-furnace in operation at the same time; but the power of the water-wheel which puts the bellows in action not being sufficiently great, these furnaces can only be kept in operation alternately.

The temperature of the gas puddling stove is, according to the nature of a process, even higher than that of a similar kind of furnace supplied with wood, coal, or turf. The flame is clear and transparent, so that the workman is enabled to command at a single glance all the points in which the metal is most active. The operation when properly conducted proceeds with great regularity and uniformity. In each of these operations from 175 to 2 metrical quintals are charged with fine metal previously heated till they are red hot, and in from one hour and three-quarters to two hours the bath is ready to be skimmed. The waste of fine metal during this process is trifling; that it has been found on an average not to exceed from 1 to 2 per cent. The quality of the product is excellent. One peculiar characteristic of puddling with gas is, that the formation and collection of the waste gases on all the same class.

The product of the gas puddling-furnace, amounts weekly to about 125 tons of pig iron. The operation in the gas reverbatory-furnace, proceeds as, in the two preceding cases, very remarkable advantages; yet this operation has not been attended with such important results as those obtained in the refining-furnace and puddling stove; for the waste (increased the waste in this case is very considerable, since it amounts from 12 to 15 per cent., and sometimes to more). The action of the stove is good, and temperature sufficiently elevated, so that when no accident occurs, as may be 150 metrical quintals can be submitted to the action of the reverbatory-furnace weekly.

After what has been observed, it will be seen that the result of the gas oven and furnaces of Wauwiler, may be considered very satisfactory.



According to the preceding data, bar-iron of excellent quality can be made with a waste which scarcely exceeds 12 to 15 per cent., and without any expense in the consumption of combustible; or, to speak more correctly, by making the application of a combustible which had hitherto remained useless. It is difficult at present to estimate the full extent of the important advantages which would result from using the gases which escape from blast-furnaces, according to the plan adopted by M. Faber; but it appears certain that this plan unexpectedly opens a vast field of improvement to the iron trade, and that it ought to occupy the serious attention of all who are engaged in this manufacture. Let us hope that, if any prejudices still exist, they will be removed by the great progress that has been made; the numerous and well-authenticated proofs of which do not admit of the least uncertainty with respect to an operation, the advantages of which may have hitherto appeared doubtful, because not confirmed by experience.

#### INTERESTING GEOLOGICAL DISCOVERIES.

Some very remarkable organic remains of those gigantic Saurian reptiles which characterized the wealdian formation, have recently been discovered in the cutting forming the entrance to the Bletchingley tunnel, on the South-Eastern Railway; they are chiefly vertebrae of megalosaurus and iguanodons, with some of smaller reptiles of the same class, now in the possession of Mr. Nimmo, the resident engineer, at Bletchingley. The cutting from which these relics of a former world were taken discloses a magnificent section of the weald strata; the huge primordial lizards whose skeletons are thus brought to light must have sported in the waters or roamed along the bank of the great lake or estuary formerly covering the districts of the wealds of Kent and Surrey; the bottom of which lake now forms the extensive level through which the Dover Railway is carried. The cuttings on this line near its junction with the Brighton Railway, at Reigate, are also highly interesting to the geological inquirer. A great variety of curious fossils are occasionally met with on the rising slopes near Malloway, formed by the excavations made during the formation of the Highgate tunnel. A very fine specimen of "echinus marinus" (sea urchin) was a few days since picked up in a field contiguous to the railway, as also a fish very much resembling a sole, the head of which is very perfect. Mr. Snow, of Highgate, has in his possession a petrified fish, found in the chalk fields, which precisely resembles a mackerel, in which the gills are quite evident. On the left-hand side of the road, just after leaving the archway, on the route to the Woodman Tavern, may be observed a narrow stratum of dusky earth, which abounds with cockles, muscles, pelecypods, and other fossilivalves. Large quantities of iron ore, combined with sulphur, in the form of pyrites, are also to be detected in the above stratum; a very interesting cabinet of fossils might be still collected from this neighbourhood. In a meadow behind Caen wood, the seat of the Earl of Mansfield, is a spring, which appears to have been overlooked by the perambulating naturalist; the water is exceedingly hard, and is so highly impregnated with iron, that the branches of trees and other deciduous vegetable substances which may casually fall into it become, in the course of a short time, thickly coated with a hard ferruginous incrustation, and possess, at the same time, considerable specific gravity; this spring is chalybeate, and its waters contain a menstruum of sulphur and iron. A few days ago, as some workmen were employed in digging a trench or drain in the neighbourhood of Pitts-green, Almondbank, they discovered the skull of an animal supposed to belong to the ox tribe, probably those which existed wild in Scotland, centuries ago, but which have been long extinct. The skull measured from between the centre of the horns to the nose two feet four inches, and the horns were sixteen inches in circumference at their thickest part. We understand that the curiosity has been claimed by Lord Lynedoch, and is now in his lordship's possession. The quarries at Sturton-hill, on the Cheshire side of the Mersey, have been the subject of much interest to geologists during the past two years; several of the most eminent members of the London and other geological societies having visited the place in consequence of the discovery, by Mr. Cunningham, of the footprints of a large animal, which most have had its existence in some former state of our planet. At first these remains were termed "footprints of the ichthyosaurus," from the supposition, hastily formed at that they belonged to an extinct species of the marasupial genus. The subsequent discovery of some bones and teeth, found in another portion of a similar formation, has, however, enabled Professor Owen satisfactorily to determine the genus of animals whose footprints are here so prominently imprinted on large masses of the sandstone. The Professor has shown that these gigantic animals must have belonged to the genus ichthyosaurus, or frogs; and from the peculiar construction of the tooth, has termed the animal "the ichthyosaurus." A question, however, has since arisen, as to the origin of the formation itself, whether fresh water or marine, it being presumed, that if this were but once satisfactorily determined, it would go far towards determining the nature and habits of the animal, whose footprints have been so singularly preserved. From time to time traces of plants have been found on the sandstone slabs that have been successively raised from the quarry, but none of a nature so decided as to warrant any conclusion being drawn from them. This point is now in a fair way of being settled in favour of the marine origin of the rock, as, on a recent visit to the quarry, Mr. Cunningham has again discovered the remains, or rather a cast in sandstone, of an immense fungus-like plant which it is known can only exist at the bottom of the ocean, thus at once giving a marine character to the whole formation. The imprint of this plant, which we have seen, is most unequivocal, and stands out in bold relief from the surface of the rock; it may be traced through all its ramifications from the root to the termination. It is about twenty-five feet in length and nine in width, a portion of which, however, has been removed in cutting the stone. This interesting remains may be seen by visiting the quarry, the rock not being yet removed; it is on the south side, and just before entering the tunnel. These discoveries inevitably lead to the following conclusions:—That this portion of the now famous of Wirral has formerly been the shore of a primordial ocean, where gigantic animals of the frog or salamander species have traversed in search of prey, perhaps, as the same shore must have abounded with smaller animals of the genus ichthyosaurus, or turbot, some of the slabs found in this quarry being literally covered with footprints of these animals; but, perhaps, more curious still, the marks of a sheep-shaver of rain are found imprinted with these footprints, having been preserved by the soft clay, and are as sharp and well defined as if it had fallen yesterday.

#### GEOLOGICAL PECULIARITIES OF THE UNITED STATES.

In examining the geological structure of the American continent, some singularities have been observed, which are believed not to correspond with the theories formed in Europe on this subject. We shall mention a few of those which appear to be most interesting. There is no chalk found anywhere in the States, neither is there any coralline (or corals, as it is called by geologists), though the localities where both might be expected are sufficiently marked. Mr. M. Lenoir states, that some shells of the recent alveolar formations in New Jersey are identical with species found in the secondary rocks. There have been discovered in small limestone of the siderite secondary formation, the prints of human feet (the marks are those of a man of ordinary size standing erect, with his heels drawn in, and his toes turned outward); the toes are much spread, and the feet flattened, like those of people accustomed to shoes; the impressions are strikingly faithful, exhibiting every molecular swell and depression with accuracy. Everything seems to warrant the conclusion, that these marks were made at a time when the rock was soft, and revealed them by pressure, which geology dates at a year or two long (and before the general denudation). They were examined by Governor Cass and Mr. Schuchert, at St. Louis and Hannibal, on the Mississippi, and they exist also at the Cumberland mountains, at ways in the same kind of limestone. Other singular facts (connected, however, with the above) have been observed in this district. At Pikesbury plains, on the Ohio, a human skeleton was found several feet below the surface, in a bed of pebbles and shells deposited by water, and having also feet of earth over them. At Cincinnati, in digging a well, an arrow-head was found nearly half below the surface, and in Illinois fragments of antique pottery and jars of green earthenware have been found at a depth of eighty feet below ground. In burning the fine sand of the wealds, when digging this ridge of gravel, found several hundred living, although at a depth of fifty-two feet. These were chiefly of two kinds of oysters, a small water mussel, of which several species exist in Britain; can, called "canaliculus," is used for food in Scotland, and another is eaten about Cork, where it is called "mussel oyster." We do not know if the species which were dug out of the gravel are found among the present American shells. Living teeth have been found in America, as here, in solid rock, of which has been called the millstone grit.

#### MINING CORRESPONDENCE.

##### ENGLISH MINES.

###### HOLMBUSH MINING COMPANY.

Sept. 6.—I beg to inform you that the shaft is sunk to a depth of 63 fms. 3 ft. ground, at present, hard. In the 110 fathom level west the lode is eight inches wide, producing stones of ore. The lode in the 100 fathom level west is one foot wide, and is worth 18s. per fathom. The lode in the winze, below this level, is eight inches wide, and worth about 10s. per fathom. The lode in the eastern winze, in the 100 fathom level, is eighteen inches wide, and worth 26s. per fathom. The lode in the western winze, in back of ditto, is sixteen inches wide, and worth 26s. per fathom. The lode in the sixty fathom level west is improved, at present sixteen inches wide, and worth about 20s. per fathom. The lode in the winze, in the back of this level, still about ten inches wide, and worth 12s. per fathom. In the eighty fathom level east the lode is one foot wide, composed chiefly of mangle and spar. The rise to the back of this level, against Hitchins's shaft, is still in moderate ground. The lode in the winze, sinking below the eighty fathom level, is a rich course of ore, being two feet wide, and worth about 40s. per fathom. The lode in the winze, in back of ditto, is sixteen inches wide, and worth 30s. per fathom. The lode in the seventy fathom level east of Wall's, is still about three feet wide, composed of mangle, spar, and copper, intermixed with ore. The sixty-two fathom level west, on the north branch, and rises in back of ditto, are without material alteration. The tribute pitches continue to look favourable.

F. PHILLIPS.

###### TELEIGH CONNORS MINING COMPANY.

Sept. 4.—The seventy west continues in the disordered ground; the lode is three feet wide, composed of spar, with but little ore or mangle. This level east is improving, and is now worth 5s. per fathom. The sixty west continues good, the lode five feet wide, worth about 35s. per fathom. The fifty west is also looking well; the lode is four feet wide, worth 60s. per fathom. The tributes are working regularly, and getting fair wages. At Good Fortune, the forty-four east is worth 6s. per fathom, but the level west is poor.

W. SINGOCK.

###### WEST WHEAL JEWEL MINING ASSOCIATION.

Sept. 6.—The seventy cross-cut, ground more favourable. The fifty-seven east, on the south branch, is worth 5s. per fathom. The fifty-seven east, on Wheal Jewel lode, is worth 6s. per fathom. This level west is also worth 6s. per fathom. In the winze sinking below the forty-two, on this lode, it is worth 5s. per fathom. The deep adit west, on Wheal Jewel lode, is worth 4s. per fathom; and the rise in the back of this level is worth 12s. per fathom. The south adit shaft is sinking in very favourable ground.

STEPHEN LEAN.

###### UNITED HILLS MINING COMPANY.

Sept. 4.—Williams's Engine-shaft—Lode four feet wide, producing some good stones of ore. Sixty Fathom Level, east of Engine-shaft—Lode four and a half feet wide, eighteen inches on the north part good ore. Sixty Fathom Level, west of Engine-shaft—Lode three feet six inches wide, producing but a small quantity of ore. Fifty Fathom Level, east of Engine-shaft—Lode three feet wide, one foot good ore, with a promising appearance. Fifty Fathom Level, west of Engine-shaft—Lode 4 ft. wide, ore throughout, but of low quality. Diagonal Shaft—Lode 3 ft. wide, producing some good stones of ore. Forty-six Fathom Level, east of Torton's—Lode 2 ft. 6 in. wide, 6 in. on the north part good ore. Forty-six Fathom Level, west of Torton's—Lode three feet wide, with but little ore. Forty Fathom Level, east of Eastern Shaft—Lode two and a half feet wide, one foot ore of fair quality. James's Shaft—Lode four feet wide, six inches on the north part good ore. Winze under the Thirty-six Fathom Level East—Lode three feet wide, very thorough. Winze under the Thirty-six Fathom Level West—Lode two and a half feet wide, producing some good stones of ore. Thirty Fathom Level, east of Eastern Shaft—Lode five feet wide, three and a half feet ore of fair quality. Twenty Fathom Level, east of Eastern Shaft—Lode eighteen inches wide, with a promising appearance.

N. LANGDON.

###### TREGILLAN MINING COMPANY.

Sept. 6.—I beg to inform you that we have holed Baker's shaft to the forty fathom level, whereby we hope to effect no small saving in bringing the stuff to surface; the lode generally in this shaft has been of an encouraging description, and has produced some good ore. The lode in the thirty fathom level east is at present producing about three tons of ore per fathom, worth 1s. 6d. per ton; we have passed through about three fathoms, the lode being of this value. I am glad also to inform you, that we have a good lode in a place that we have just commenced sinking below this level, about twenty-five fathoms east of Baker's shaft, worth 20s. per fathom, and our prospects in other departments of the mine are also looking favourable. We have sampled this day at par 40 tons 1 cwt. of ore.

JAMES NINNES.

###### THRELL MINING COMPANY.

Sept. 6.—The lode in the engine-shaft is sixteen inches wide, producing good stones of ore; eight feet sunk last month, much the same. The lode in the fifty fathom level, west of engine-shaft, is eighteen inches wide, tribute ground; five fathoms driven last month, much the same. The lode in the sixty fathom level, east of engine-shaft, is fifteen inches wide, producing some ore; six and a half fathoms driven last month, five fathoms tribute ground. The lode in the six, in the back of the forty fathom level, east of engine-shaft, is fifteen inches wide, very good tribute ground; three and a half fathoms risen last month, much the same. The lode in the thirty fathoms level, east of Williams's, is sixteen inches wide, very good tribute ground; five fathoms driven last month, much the same. The lode in the rise, in the back of this level, is eighteen inches wide, very good tribute ground; six fathoms risen last month, much the same. The lode in the twenty fathom level, west of John's shaft, on the Slid-park lode, is one foot wide, producing some ore. The lode in the twenty fathom level, west of John's shaft, on John's lode, is six inches wide, good tribute ground; two and a half fathoms driven last month, one fathom good tribute ground, one fathom and a half very good tribute ground. The lode in the rise, in the back of this level, is six inches wide, good tribute ground; three fathoms risen last month, much the same. Tregillan's lode, at the same level, is two feet wide, producing good stones of ore, very kindly; above nine fathoms driven last month, much the same. The lode in the twenty fathom level, east of Williams's shaft, is six inches wide, producing a small quantity of ore; five fathoms driven last month, three fathoms tribute ground. In the ten fathom level, west of John's shaft, on a part of the Slid-park lode, five and a half fathoms were driven last month, good tribute ground. The ten fathom level, east of Williams's shaft, on the north part of the lode, is ten inches wide, good tribute ground; two fathoms driven last month, very good tribute ground. The number of pitches working, and the tribute of each, shall appear in our next report. We expect to sample on Monday next about 250 tons of ore.

H. WILLIAMS. J. MORCOM.

###### GREAT WHEAL CHARLOTTE MINING COMPANY.

Sept. 7.—In sending you the report of this mine, the lode in the eighty-two fathom level is five feet wide, producing about 5s. worth of ore per fathom. The men have cut through the lode driving north at this level, and found the lode pure, although large. The lode in the seventy-two fathom level west from shaft is four feet wide, but poor at present. The lode in the winze, back of this level west, is seven feet wide, and worth from 25s. to 30s. per fathom. The lode in the back of this level east is worth 20s. per fathom. The lode in the winze, below the sixty-two west, is six feet wide, yielding about five tons per fathom, and worth 4s. 10s. per fathom. The lode in the winze further west, in the bottom of this level, is seven feet wide, turning out four tons per fathom, worth 4s. 10s. per ton. The lode in the winze sinking under the seventy-two fathom level west from shaft is four feet wide, and worth about 12s. per ton. We hope to sample 150 tons on Tuesday next.

S. TREVETHAN.

###### BEDFORD CONSOLIDATED MINING COMPANY.

Aug. 26.—We have not yet been able to complete the sinking of the sixty fathom level winze-plot, in consequence of there having been two breakages of the boiler since last setting day, which has caused a week's hindrance in the company; all is, however, again set right, and we shall finish the said plot in a few days. We have, in the meantime, set the sixty and to drive east to cut the lead lode, and, according to the tendency, or rather direction, of that lode at the forty fathom level, there will be to drive eighteen or twenty fathoms to reach that object; it will then be the most proper mode of proceeding to open north and south on the lead lode, which will be the means of proving that and cutting the engine lode; this work I would recommend to be efficiently carried out, as the engine lode we sink the engine-shaft any deeper. The fifty fathom level cross-cut is driven twenty-two fathoms south of the engine-shaft, and an appearance of any lode has been seen, the ground is a close dark blue. At the forty fathom level 7 fms. 9 ft. 4 in. have been driven south on the lead lode, which varies in size from four inches to one foot, composed of soft barres, spar, and lead ore, some tarry, some, but not in this end. We have just passed through the split of the Great South Copper Lode, it is from eighteen inches to two feet wide, of a hard copper nature, containing some mangle and stones of copper. The opposite adit driving north, the lead lode at present looks more promising; it is from ten inches to a foot wide, and yielding some good work. We have agreed to rise a winze in the back of this level, on the lead lode, to the thirty fathom level, which will divide the ground for tributes, and establish this part of the mine, which is very much required. We have also determined to lay down a railroad for the purpose of removing the stuff to the shaft, instead of wheeling. At the thirty fathom level we have set an end to drive east on what is called the middle lode. The lead lode here, going south, is about eight or ten inches wide, yielding a little ore. The ground in the back of this level, working by

a party of tributers, has, during the past month, answered well. At Hurl-down we find that the small lode, reported upon the 21st ult., as having been cut in the north adit, appears to be only a split (as was then considered) of the main lode; by extending the adit still further north, we have cut, we consider, the main lode, and which has been the object of our pursuit; it is eighteen inches to two feet wide, rich in mangle, and we have also some spots of copper; there is issuing therefrom a great deal of water; the ground is a soft blue, of a light colour, more congenial, in our opinion, for copper than anything seen there before. We have only cut the eastern part of this lode, but, in a few days, we hope to report that the western part is also cut on the same, by the cross-course. The particulars of the pitch, with prices of bargains, &c., you will have described by Mr. Peter in the setting report, with an account of the lead and copper at grass.

F. R. ROWE.

###### YINCOCK MINING COMPANY.

Sept. 7.—The lode in the 145 west is about two and a half feet wide, worth from 12s. to 15s. per fathom for tin and copper ore; the east end, same level, is unproductive; the pitches in back and bottom of 145 are yielding good work for tin. The lode in the 120 east is about three feet wide, producing fair quality tin stuff, worth 12s. per fathom. The 110 fathom level east is worth 12s. or 15s. per fathom for tin and copper ore. The lode in the winze, sinking under the 100 fathom level, to go down on the 110 end, is about four feet wide, good work for tin and copper ore, worth 16s. per fathom. The 100 is worth from 12s. to 15s. per fathom for tin. The lode in the winze, sinking under the ninety fathom level, is ten feet wide, worth from 40s. to 50s. per fathom. The lode in the eighty-one east is at present in a disordered state. Other tributes, in this part of the mine, are without alteration since my last. Our pitches for tin and copper ore continue to produce fair quality work. In our north mine we have commenced sinking the new engine-shaft under the forty fathom level, by nine men; the lode in the shaft is about three feet wide, worth from 15s. to 20s. per fathom. The lode in the forty fathom level east is three and a half feet wide, worth 10s. per fathom. We have commenced sinking Palmer's shaft under the thirty-five fathom level from surface; we are doing all we can on the north ground, in the full expectation of making a good mine.

W. PAUL.

###### CORNUBIAN MINING COMPANY.

Sept. 3.—We have held our public setting for the present month. The engine-shaft is sunk 8 fms. 1 ft. below the fifty fathom level; we expect by the next setting to complete it to a sixty fathom level; the ground continues very favourable, and the price we still give is 11s. per fathom. The fifty fathom level west of engine-shaft is again set, to resume driving; during the past fortnight we have been obliged to stop it, on account of putting all force to sink the old western shaft, and driving the fifty fathom level cross-cut; in the former we have cut a great deal of water, and are now obliged to suspend sinking until the cross-cut is driven, under the shaft, where we purpose rising instead of sinking the said shaft, and in the course of this month we hope a communication will be effected. The fifty end west, on the Chiverton lode, is two feet big, with a rich leader of ore, about eight or ten inches wide—a very good and promising level. At the forty fathom level driving west of the old western shaft the lode is three feet big, composed of hard spar, some mangle, and good stones of lead. We have staked a piece of the Chiverton lode, in the western part of the winze, between the forty and fifty fathom levels, which we have lately holed; here we have a good course of ore, superior to anything seen since our commencement of the mine. After the western shaft is holed to the fifty fathom level we hope some valuable ground will be set on tributes. At the sixteen fathom level driving east of Clifford's the middle lode is about one foot wide, with a rich leader of ore, about two inches wide; this part of the mine has decidedly a very encouraging appearance. We are driving the ground for 20s. per fathom, and have set a tribute pitch there to-day at 3s. per ton, and the same shaft to sink from the sixteen to the twenty-four fathom level at 30s. per fathom. At Murray's shaft the stratum is favourable—we are down from surface about nineteen fathoms. We have sixteen pitches working, varying from 3s. to 7s. per ton, employing forty-three men on tributes, and forty-seven on tutwork. You will perceive that the increase of sampling noticed in my last monthly report has been realised.

#### FOREIGN MINES.

##### REAL DEL MONTE MINING COMPANY.

Statement of Accounts showing the position of the Company's affairs for the eleven years.

Years.	Expenditure.	Returns.	Profit.	Loss.
1809	£107,723	£170,979	—	£63,256
1810	202,303	341,679	—	49,374
1811	279,966	390,245	—	172,281
1812	314,207	590,792	—	44,616
1813	405,790	578,392	—	130,437
1814	30,399	30,396	—	74,942
1815	608,527	113,390	—	128,262
1816	639,276	685,877	34,601	—
1817	787,913	898,482	20,569	—
1818	788,753	641,986	—	127,766
1819	730,815	666,339	—	72,473
	£3,996,931	£4,521,907	£76,740	£1,601,312
		Deduct profit .. .. .	76,740	
		Loss for the eleven years .. .. .		£1,678,052

The above account shows that an average annual loss of £157,888 has been sustained by the Real del Monte Company during the last eleven years.

\* Deducting difference of value on 15 bars of 1803.

##### Mine Report.

Mineral del Monte, June 20.—We are still clearing and securing the Sereno level, east of San Ramon shaft, and have not yet arrived to the end of the ground; we find the lead full and in a cross-bedded. In San Gregorio winze, sinking below the eighty vara level, eighty-four varas east of cross-cut, at San Ramon shaft, there is a small quantity of silver ore; this place was commenced the first three weeks in the month, to make a passage for the water, which now differs through the vein instead of being drawn to surface as formerly. In the Santiago, or 118 vara level, driving west of cross-cut south, 36 varas west of Dolores diagonal shaft, there is some silver. In the Jubileo, or 116 vara level, driving south on the Santa Brigida, sixty-four varas east of the diagonal shaft, there is favourable ground; the part of the vein we are going on is from one and a half to two varas; no north or south wall—the lode is poor. In the adit level, driving east to cut the Santa Brigida vein from cross-cut south, seventy varas east of Dolores shaft, the ground is moderate—rain through a vara wide, but poor. In the side adit, driving west of cross-cut south, seventy-three varas east of San Gregorio shaft, is favourable ground. At the Santa Teresa we are shaping the back of the Esperanza, or 118 vara level, east of shaft, for haulers to take the water to San Cayetano shaft through San Pedro level. At Terrenos we have suspended sinking the shaft, and on the 27th inst. commenced to drive Taylor's 265 vara level south to cut the vein—the ground is at present hard, but coming several branches go out of the shaft towards the south, we may hope soon to meet with more moderate ground for driving. In the slopes at the bottom of El Aguero level, east of communication, the lode is about one and three quarters varas wide, with average and some excellent ore. We are, at present, the north side of El Aguero level, east of communication, about five varas east of cross-cut, where the lode is large, with average ore—the ground is hard. In El Aguero level, west of Terrenos, the vein is poor, with moderate ground for driving. In the slopes under Terrenos winze the part of the lode we are working upon is about two varas wide, with average and some excellent ore; there is still more vein standing to the north and south of the winze, which will probably be taken down when the slopes are brought in at the level of the bottom of El Aguero. In San Cristobal winze, sinking below the San Felipe level, 118 vara east of Terrenos shaft, the lode is about one and a half vara wide, with average and some excellent ore; the ground is moderate—rain through a vara wide, but poor. In the side adit, driving west of cross-cut south, seventy-three varas east of San Gregorio shaft, is favourable ground. 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**STEAM-ENGINE.—FOR SALE,** a new 36-horse power HIGH-PRESSURE STEAM-ENGINE, with slide valves, metallic piston, and malleable crank shaft, 20-inch cylinder, 4-foot stroke, with boiler, &c., complete.—For particulars apply to Messrs. Tait and Ley, Whitehaven, Cumberland.

**THE THAMES TUNNEL** is Open every day (except Sunday) from nine in the morning until dusk, and is brilliantly lighted with gas. The entrance is on the Surrey side of the river, close to Rotherhithe Church. The Foot Passengers' shaft at Wapping, and the remaining portion of the Tunnel, in order to form a junction with the said shaft, are now in active progress. Admittance, One Shilling each.

Company's Office, Walbrook Buildings, Walbrook, September, 1841.

#### PUBLIC COMPANIES.

MEETINGS.	
Talbot Iron and Coal Company	20, John-street, Adelphi ... Sept. 15 ... 1.
Leeds and Liverpool Canal	Waterloo Hotel, Liverpool ... 17 ... 11.
Commercial Dock Company	100, Fenchurch-street ... 17 ... 1.
Stafford and Worcester Canal	Swan Hotel, Wolverhampton ... 21 ... 11.
Port Cawl Iron and Coal Company	41, Finsbury-square ... 21 ... 2.
Bolton Mining Association	Warwick-court ... 28 ... 12.
British Iron Company	London Tavern ... 28 ... 1.
Great Wh. Charlotte Mining Ass'n	George and Vulture ... 28 ... 1.
Northern and Eastern Railway	London Tavern ... Oct. 7 ... 2.

CALLS.	
Redmoor Mining Company	10s. Sept. 26, Bonquet and Co.
Tregollan Mining Company	30s. Sept. 26, London and Westminster Bk.
British Colonial Bank	51s. Oct. 12, 13, St. Swithin's-lane.
Biscanovon Iron & Coal Company	51s. Oct. 14, Masterman, Peters, and Co.
The Miners' Company	16s. Oct. 15, Glyn and Co.

DIVIDENDS.	
General Steam Navigation Co.	60s. Lombard-street ... Sept. 27.
South Canadian Mine	25s. East Cornhill Bk., Lisleard ...

#### NOTICES TO CORRESPONDENTS.

**PRICES OF SHARES IN LAST PAGE.**—We have received a communication from Somerset-house, stating that appending the names of our correspondents subject to the advertisement duty. We shall endeavor, in the course of the next week, to remedy the omission caused in the present instance, of their names being attached to the reports.

**TALBOT COAL AND IRON COMPANY.**—We have received several communications with respect to the affairs of this company during the past week, from some of which, we learn, with much satisfaction, of the "movement" on the part of the holders of debentures in Dublin. We agree with "Hibernicus," that it is more prudent to reserve our remarks until after the meeting, to be held on the 15th inst., we shall then be able to contrast the report presented at such meeting with the past, and, as we cannot be expected to be in possession of any exclusive information of the course intended to be pursued, we admit that it is best to be silent for the present.

The letter, with order in favour of "A. S.," and the figure of German construction, arrived this morning—the latter shall find an early admission in our columns. We are glad to hear of the arrival of "C.," and hope to receive some communications on the geology of the district from whence he has returned.

## THE MINING JOURNAL,

Railway and Commercial Gazette.

LONDON, SEPTEMBER 11, 1841.

Our attention has been directed by a correspondent to a Bill passed through the House of Commons, in the last session of Parliament, having for its object the improvement of the port and harbour of Wicklow, where the principal shipments of the sulphur ores of the county Wicklow take place. The object of our correspondent is to consider the effect which the passing of such Bill would have on the mineral products of that county—the shipments from Wicklow and Arklow in mineral produce alone, for the present year, being estimated at nearly 100,000 tons, on which, assuming harbour dues of 6d. per ton being imposed, a tax of 2500*l.* per annum would thereby be levied on the mining industry of the county. The subject is well worthy of consideration, and, having taken measures for acquiring information, we defer offering an opinion, inasmuch that to determine on the question as abstractedly put forward, in the absence of further knowledge, would be premature. It is to be seen what advantages are likely to be reaped by the mine adventurers, whether by admission of vessels of larger tonnage freights would not be reduced, and shipping expenses lessened, more especially in the winter season. We will endeavour to put ourselves in possession of the *rationale* before our next, and, in the mean time, consult the Act of Parliament.

While on subject of sulphur ores, as affording so vast an extent of shipment from the ports of Wicklow and Arklow, we may say one word on the letter of a correspondent, on subject of an import duty on foreign sulphur, whose letter is inserted in another column. It will be observed by our note appended thereto that the quantity of sulphur ores shipped from county Wicklow, from 1st of January to 31st of July last past, is 42,932 tons, and, from the extension of the workings, both underground and at surface, we may fairly contemplate upwards of 80,000 tons in the twelve months. This represents, we think, sufficient grounds for an application to Parliament, and to justify the support of Government in granting an import duty on all foreign sulphur, for the KING OF THE SICILIES, it has been shown, gained upwards of 130,000*l.* per annum by taxing our importers and the manufacturers in this country.

As we propose, under the new Administration, submitting the subject for their consideration, we trust that those interested will aid us in our endeavours to obtain for the English and the Irish miner common justice, and to secure employment to a hard-working portion of the community.

On again reverting to the subject of the sulphur mines of the county Wicklow, we may have occasion to say something of the unfair taxation to which they are subjected by the administration of the Poor Laws in that county; those who employ the poor, with the certainty of expenditure of thousands before a return is made—at all times at risk, and too frequently with loss—being the parties who are fixed upon, while the "lords," or mineral proprietors, who receive their royalty or dues, no matter what the good or ill success of the mine, are relieved from them.

It was our intention to have entered at some length on the proceedings of the Durham County Coal Company, and to have comprehended in our remarks certain information which we have collected as regards the affairs of the Northern Coal Mining Company—its worthy scion; but, for more reasons than want of space, we defer so doing until a future Number, more especially as, in our present, will be found a letter of "explanation" from Mr. GIBSON, who, if not implicated in certain transactions, will at least find it necessary to render pretty evident that he is free from censure, and, moreover, from certain claims which we are given to understand, are about being (if not already) instituted.

It will have been observed by the report of the meeting of the Durham County Coal Company, that, in the course of reading the report of Mr. MATTHIAS DUNN, the principal viewer, and in reply to certain questions put by Mr. LEMMAN, a little fact dropped out, which created a slight ebullition. It is hardly necessary to direct the attention, even of absent proprietors, to the circumstances, that, whilst the main coal of the 700 acres (alienated from the Durham County Coal Company) was appropriated to the Northern Mining Company, Mr. GIBSON had concluded a simultaneous bargain for the five-quarter, in which he sunk a pit contiguous to that of the Northern Mining Company, which has been wrought extensively by him—the fact not being known to the proprietors previously, and the five-quarter seam having been pronounced by the former viewer (Mr. FORSTER) as valueless, and on the sale of which to the Northern Mining Company we believe a question to be tried in a court of law or equity now exists.

We must here say one word or two on the Northern Mining Company, for we contemplate some curious aspects, if we may credit the communications of our correspondents in the North,

who, we are happy to find, are on the increase. One, for instance, tells us that "there is the very — to play among the directors of the Northern Mining Company, one of the shareholders from Norwich having been down, entered the office and seized all the books, papers, &c. As advised, however, by our correspondent, we give this only as a report. We now proceed to another little bit of information, from which we learn that, in consequence of the *exposé* which appeared in our columns of the conduct of certain A's, B's, F's, and G's, the shareholders resolved on "doing" something for themselves, and putting an end to the "doings" of the old directors. Since the meeting at Norwich we are informed that—however, we had better take the words of our correspondent—

"Since the meetings at Norwich, I can state to you positively that the old directors have been all removed, and the new ones going upon the ground of secrecy; they first fell back upon Master Thomas Forster, who, for obvious reasons, expressed a disinclination to continue any longer as the adviser, but it seems had recommended a Mr. Jobling, a young practitioner, as viewer. The dealings of the new directors, as you may suppose from what I presume you have heard, of the Forsters, have caused a good deal of observation in this quarter; John Forster is, therefore, out of commission in this company, and is now retained as the confidential manager of Gibson, Brown, and Co., in the collieries left on their hands during the commotions. With reference to the remarks in the Journal—in which, by the-by, you confounded one concern with another, and no wonder—I find that the party (B's and G's) had drawn bills, and accepted and discounted them at a bank in Newcastle, of which Gibson is the manager and director; 30,000*l.* had become due, and dishonoured by the new directors, for which the bank proceeded to recover, upon which they pleaded in Chancery that the whole transaction was fraudulent, a great deal being drawn upon fraudulent valuations, from collieries which the company would not take to, &c., and eventually obtained the injunction noticed in your paper, that the bank should not proceed until after the hearing of the bill, such claiming redress to the tune of 70 or 80,000*l.* In the meantime, the collieries have been all laid dormant, but are now, under new auspices, beginning gradually to work, which they are to do till the directors determine whether to carry them on or to sell them—in short, they are in a worse mess than the Durham County Coal Company by far, inasmuch as they have not such dearer collieries to work upon. It seems strange that these new directors should not have disengaged themselves from the Forsters. It is quite clear all cannot be right with these private meetings of public companies."

With this extract we must close our remarks for the present week, awaiting additional information for giving full effect to several points which have been submitted to us, but which requires being authenticated beyond the communications at present received.

A paragraph appeared in the *Times* of the 9th inst., reflecting on the character of a highly respectable and useful class of the commercial community—we refer to the metal brokers—a charge having been made that the custom in the metal trade occasionally adopted, in passing contracts, was rendered a means of securing undue profits to the brokers, beyond the ordinary brokerage charge of 1 per cent., and which was in such paragraph exemplified by a commission of 4 per cent. being obtained in a recent transaction. The publicity thus given to a charge so seriously affecting the character of the metal brokers of the City of London, and their interests, as being the business medium between buyers and sellers, has naturally created an excitement among that body, the consequence of which was that a meeting was held yesterday, and which was numerously attended. It is with satisfaction we have it in our power to state that the charge, or, rather, sweeping censure, of our contemporary against the metal brokers generally appears to be grounded on a transaction of one of their body, in the sale of 3000 tons of Scotch pig-iron, at 3*l.* per ton, deliverable in the spring, on which the discount of 4 per cent. was allowed for cash, besides a commission (usually given to the *dealers*) of 4 per cent., the whole of such commission having been retained by the broker, instead of the customary brokerage of 1 per cent., as already stated.

It is evident, from the explanation thus afforded, that the transaction of which complaint is very properly made is not one of general usage, or sanctioned by the trade, but an individual instance of misappropriation of monies, as the commission allowed should have been received by the merchant, and not by the broker. We do not wish to enter further into the matter on the present occasion, but have felt it our duty to notice the charge, and the way in which it has been met, convinced, as we are, that the class of brokers, whether in the metal trade or others, is a highly useful body, insuring the honest application of business rules and practice, and keeping a fair and proper check on prices, as affects our imports and exports, as well as home manufacture and consumption. Some remarks on the spelter trade, inserted in another column, which we are not, however, prepared to adopt, will at once render this manifest. We do not feel at liberty to give the name of the delinquent, but, as the *Times* made the charge, we doubt not but that our contemporary will acquit the general body, by naming the individual.

We had occasion to notice, in a late Number, the investigation made at her Majesty's dock-yard, with the view of testing the applicability of Sir WILLIAM BURNETT's process to the preservation of timber, canvas, and cordage, from the effects of dry-rot, in which we noted that the patented process was reported to have been adopted by Government—at the same time doubting the information so acquired, from the circumstance of the chloride of zinc used under Sir W. BURNETT's patent being a far more expensive article than that of sulphate of copper employed under MARGARY's patent. We were not then in a position to enter minutely on the subject, but having since instituted inquiries, we at once submit them, with a view to their correction, if ill-founded, or to correct the misrepresentations of others, and to abolish a job which, we fear, is being perpetrated at the expense of the country, solely for the advantage of a gentleman who holds a high official situation, and thereby commands, or at least possesses, patronage. A few words will suffice our object, for we cannot entertain a doubt but that inquiry will be instituted, and that with a change of Administration we may contemplate a change of measures as well as men.

The chloride of zinc used by Sir W. BURNETT we find, on inquiry, to cost 2*s.* per lb., while that of sulphate of copper is supplied at 4d. per lb., or one-sixth the cost; the question, however, which is to be looked at, is that which involves pounds, shillings, and pence, and this we propose doing. Referring to the specification of Sir W. BURNETT, we there find that the quantity of chloride of zinc is as one pound to five gallons of water; this, however, has been since altered by the instructions for its use, to the application of one pound to fifteen gallons of water. On reference to the several works where MARGARY's patent is in use, more especially those under Mr. BRUNEL, LOCKE, and other eminent engineers, we find the proportion of sulphate of copper to be one pound to eight gallons of water. Now, if we assume, and such we believe to be matter of fact, that the absorption is the same in the use of both preparations, we have the following as data.—A load of timber, comprising fifty cubic feet, will, as we are credibly informed, absorb twenty-five gallons of the preparation. We should then stand thus.—BURNETT's patent, one pound to fifteen gallons of water, at 2*s.* per lb., would be equal to 3*s.* 4d. per load of timber, consuming, as such would, twenty-five gallons, whereas MARGARY's, which requires one pound to eight gallons of water, or about three pounds to the load of timber, would be rendered at a cost of 1*s.*, or less than one-third the charge of that adopted by Government. We trust this matter will not be lost sight of, while it is our object to point out to parties using the preparation for anti-dry-rot, the comparative prices—it is for them to inquire and determine on the comparative advantages presented them under the respective patents to which we have directed attention.

#### ORIGINAL CORRESPONDENCE.

##### ON THE COMBUSTION OF COAL WITHOUT SMOKE.

TO H. SULLOCK, ESQ.

SIR,—I have just read your last letter in the *Mining Journal* of the 4th inst., on the use of coal, in reply to mine, and regret to find you do not consider the statement of the manager of the water-works in this town as satisfactory. Many persons daily visit those works, and express their conviction of the efficiency of the mode by which smoke is avoided, and an increased evaporative power obtained. Mr. Thompson distinctly states that, "although they use less coal, they have a large increase in the quantity of steam," and no smoke. For all practical purposes, this, I apprehend, will be considered as meeting the question. You suggest my making an experiment to ascertain if, with a given area of grate, "I can burn as much fire in the same time as I can with light firing, and without the aid of the dispensers." Excuse my saying I do not exactly understand your meaning, by the phrase, "to burn as much fire in the same time." I apprehend you have too much associated the idea of using the largest quantity of coal with that of obtaining the largest quantity of heat. I conceive the really useful experiment should prove by which method can the largest measure of heat be obtained from any given quantity of coal, in any given furnace, in any given time, for I cannot understand the value of an experiment which proves the mode of using—disposing of—the largest quantity of fuel, unconnected with the consideration of the quantity of heat obtained.

But you observe, "the whole question turns upon this point—viz., rapid combustion; or, in other words, it is altogether a question of time." Here I think you have confounded two distinct facts; I agree with you in the former, but am quite at issue with you as to the latter, for we must not confound "rapid combustion" with "rapid consumption of fuel"—and here lies the fallacy. The former can be productive only of good—the latter may be productive of waste—and on this turns the whole question. For instance, a ton of coals may, under one system, be used in a furnace, in a given time, and produce a given quantity of heat, while by a different system a less weight of coal may be made to produce the same heat, in the same furnace, and in the same time. We surely, however, would not give the former a preference merely because it was enabled to use more coal. In the one case much of the combustible matter would pass off in an unproductive, and even positively injurious state, whereas, in the other, the whole would be productive of heat. I am, therefore, compelled to differ with you, when you say "it is all a question of time." I allege it to be a mixed question of time, and a perfect process—that is, perfect combustion, as we see in the solar lamp. If by both processes, the combustion were equally perfect, and the same quantity of heat obtained, then it would, indeed, be "altogether a question of time," and the plan that would effect the most rapid combustion—that is, in the shortest time—should be preferred, for the practical value of the process is not the consuming the largest quantity of coal, but the obtaining the largest quantity of heat in the shortest time.

You say, "it is not quite so self-evident, that to burn fuel perfectly requires no more time than to burn it imperfectly—in fact, I know to the contrary in an ordinary furnace." It may be so in an ordinary furnace, but that is just the error I am desirous of remedying. You add, that you observed, "I carefully avoided letting too much air into the furnace." Certainly I did, because by so doing I prevented waste from the gases passing off by the chimney of so small a boiler unaccommodated. This, however, will vary according to the circumstances of each furnace; for instance, at the water-works, the large ash-pit remains open, and the passage of air unrestricted, the boiler being sufficient to absorb the heat made, and there being sufficient air drawn in to mix with the gases behind the bridge by reason of the excellent draught.

You ask "why it is that such means are used in locomotives to increase the draught, and, in consequence, the rapidity of combustion?" There are many reasons for this—one is, because the fire surface and box are so small; the principal one, however, arises from the circumstance of their using coke instead of coal, and the difference in the conditions under which air should be supplied. With coke, the quicker the draught the quicker the combustion, and the greater the height; but it is quite otherwise in the use of bituminous coal, and on this very ground I rest the necessity for admitting the air by two distinct processes, and in two separate places—the one going to the gas, and the other to the coke on the bars. The gases have not only to be expelled from the coals, but to undergo the process of combustion; and these gases are great impediments in the furnace, and great destroyers or absorbers of heat, unless duly supplied with air, and their own combustion be completed.

You say, "depend on it, where there is a rapid draught there is much smoke." Undoubtedly it is so, under the imperfect system. But why is it so? I assert that, with a rapid draught, it is quite practicable to have perfect combustion without smoke, and without any check on that draught by dampers. This is exactly the case at the water-works. The draught is remarkably good, whistling through every crevice, and yet, with a large consumption of coal there is no smoke, and you may therefore depend on this fact, that where there is a good draught the same quantity of fuel may be made to give out more heat and less smoke than is done under the old system, provided the air be supplied in the proper way.

For the gases produced from a ton of coals, the necessary quantity of air is very great, and may be estimated at about 120,000 cubic feet—a quantity that would fill a chamber one foot square and thirty miles in length, and this in addition to the still larger quantity required for the coky solid matter on the bars. I may here add that, under the old system, when you see, not the largest quantity, but the blackest smoke, from the top of a chimney having a good draught, you may be assured that at that moment there is the greatest heat and the largest flame in the furnace below, for under the old system much black smoke and much flame always co-exist. But we deceive ourselves, if by that means we think we obtain most heating effect, for that heat and flame is then confined to the region of the furnace, and a few feet beyond it; there, and there alone, is the work of evaporation going on, the flows then containing least heat are filled with this mischievous body of black smoke and soot—the worst possible conductors of heat. This is easily proved, for when, by closing the orifice by which air is admitted to the gases, a large volume of smoke is made, the thermometer which indicates the temperature in the flues instantly falls, but again rises on again admitting the air. When, however, perfect combustion is effected, the flues will be found to be clear and transparent as the open air, containing more heat, but neither flame nor smoke, as is seen over the flame of the well-adjusted solar lamp.

You observe, that in your neighbourhood from one to one and a half ton of coals per horse power per week in the usual consumption, and hence infer that such a quantity "would try my plan hard." Now, the evil I charge against the ordinary plan is, that it compels you to use this very large quantity of coals to obtain a given quantity of heat for your boilers, and, further, compels you to bear the great nuisance from smoke. If, however, by any system, the same amount of available heat can be obtained by the use of less coal, you surely would not charge it as a defect that you did not get through so much coal. The quantity used at the water-works was, I believe, about that you mention, and about half slack half coal, and if you will visit those works I feel persuaded you will have your doubts removed.

I remain, Sir, yours, &c.

Liverpool, Sept. 6.

C. W. WILLIAMS.

#### ON MINE SURVEYING.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—The controversial part of this subject has been gone through, and sufficient time has elapsed for all parties to take an unprejudiced view of the important matter, make all necessary inquiries and experiments, and get confirmed in the truth. With your permission we will now commence the second series, which we hope will prove a far more pleasant and profitable task than the first. Our design is for it to consist in a full practical and detailed course of surveys, laid before our mining brethren in the *Journal*, with invitations for them to furnish the required solutions through the same medium. I have no doubt, Sir, but the opinion will be general that such a proceeding must be attended with much benefit and satisfaction to the mining community, and, as mathematical computations can often be compressed in a small space, the operations may occasionally be introduced at length without intruding too much on your useful columns.

An idea presents itself to my mental view at this moment, which I venture to reveal, in hope that some may be induced to act upon it, and thereby greatly enhance the usefulness of the *Mining Journal*, as well as promote their own safety, interest, and reputation. My meaning is this. When mine agents have to make a course of drilling for any important



work, such as rising against a shaft, &c., they are, or should be, anxiously desirous of obtaining every means of ensuring certainty. Now, in order to obtain a test for their own conclusions, allow me, by your leave, to recommend them to send a clear statement of the survey and the result required to your office for publicity, and I am persuaded that you would cheerfully find a place for it under the head of "Original Correspondence," or somewhere else, and I may further venture to predict that many would willingly respond to the call, and furnish, without delay, a correct reply mathematically demonstrated. Believing that this suggestion will be cordially received, and that not a few will be found to avail themselves of the advantage of it (and myself for one), I beg to observe that the table I introduced in the Journal of the 22d of May, 1841, for converting degrees into bearings, and reconciling both kinds of dials, will come advantageously into operation on these interesting occasions—consequently it will be indispensable for every one forwarding a survey to state whether it was performed with a "right-hand" or a "left-hand" instrument. To the "diffident" it may be proper to observe, that the communication may be sent to the Editor in confidence, and no exposure whatever need be apprehended.

By way of introduction, I beg leave to furnish a very plain and short survey, which will require but little time, and no difficulty, to compute. I dare say you will let us know, Mr. Editor, that the subject is open to all hands, and "free for all the world," consequently every one, I presume, is as much at liberty to propound as to solve.

## CASE I.

## SURVEYED WITH A RIGHT-HAND DIAL.

A diagonal shaft sunk on the course of a lode from surface to an adit level measured 95 feet, with an underlay of 27 degrees, and bearing 74 degrees south of east. From the centre of this shaft the dialling of the adit level was as follows:—

	Pt. in.		Pt. in.
1. 196½ degrees .....	34 0	4. 145½ degrees .....	21 4
2. 184 " .....	23 2	5. 122½ " .....	13 6
3. 178½ " .....	37 10	6. 219 " .....	29 3 end

A new vertical shaft has been pitched, and it is intended to drive a cross cut under it from the present end of the adit level. The ground at the surface is irregular, so that one shaft cannot be seen from the other, and the survey from the centre of the above diagonal shaft at surface to the centre of the new shaft is as follows:—

	Pt. in.
1. East of south 32 degrees ....	Elevation 154 degrees .... Length 47 0
2. East of south 14 " .....	184 " .....
3. West of south 34 " .....	Depression 124 " .....
4. West of south 34 " .....	Horizontal " .....

Required the exact length and bearing of the cross-cut from the adit end, to come under the vertical point of the centre of the new shaft, in order to rise against it; also, what will be the depth of the new shaft from brace to bottom of adit?

I remain, Sir, your's, &c.,

Callington, Sept. 5.

JOHN BUDGE.

[We have ever been admirers of "facts and figures," and if we admit opinions and hasty deductions in our "Original Correspondence," it is not that we would exclude the former. We may tell Mr. John Budge that we like these letters with working problems far better than all the lengthened visionary letters which our correspondents can write, and if others will come into the field and keep the ball a-going, we promise our readers a successful game, while those who favour us with their literary "contributions" may rely on "a fair field and no favour." We think it right to add, that we shall readily act on Mr. Budge's recommendation, and will find, at all times, a corner for communications which may treat on the subject. It will not be necessary to append names or localities to the cases proposed, or to answers given, while any assistance in our power will be readily afforded.]

## IMPORT DUTY ON FOREIGN SULPHUR.

## TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I take the liberty of soliciting your attention to the subject of an import duty upon foreign sulphur, as it is now likely to be received with more consideration by the new Ministry, advocating as they do the system of protective duties, than it was by the Whigs professing to carry out the principles of free trade. The gratitude of the Cornish and Irish miners is due to you for your former exertions, and I trust they will now be induced to co-operate with you should you be disposed again to come forward in their cause. I am fully persuaded that the great consumers of sulphur (the makers of sulphuric acid and alkali) can make use of munda or the sulphury ores of Cornwall and Ireland as a substitute for sulphur, but, as there is great additional expense of carriage and in the operations of using a more bulky article, it becomes simply a question of price which they will use, when sulphur falls to a certain price it will be used in preference. An import duty of 5s. per ton would ensure to the Cornish and Irish mine proprietors a profitable market for their sulphury ores. Such a tax would be very popular, it would prove a boon to the mining interests, and a fair retaliation upon his Majesty the King of the Two Sicilies, whom you have appropriately designated his "Volcanic Majesty." At the same time, it would place the consumers in a more secure position as to supplies of the material. Will you, or any of your numerous correspondents, have the goodness to state where the most extensive deposits of munda lie, and what may be considered a fair price on board ship at the nearest port.

Llanelli, Sept. 4.

I am, Sir, your's, &c.,

A CONSTANT READER.

[The subject has been so frequently treated upon, that, but for the reasons assigned in the first paragraph of our correspondent's letter, we should not have been disposed, at this moment, to resume its consideration. We cannot, however, expect that the Cornish and Irish miners will come forward to protect their own interests, although the price of foreign sulphur has fallen from 13s. to 6d. 10s. per ton, and pyrites, or the sulphur ores of Wicklow, diminished in price more than 30 per cent. (we take the price at the mine)—they are inaccessible to their own interests, but more especially those of the working miner. If the price of the article is depressed in the market, what says the agent or adventurer, instead of putting his shoulder to the wheel, and aiding his neighbour in bringing about a change of things? why, simply this, that he must stop certain sulphur bargains—that prices of tribute pitches must be cut down from 5s. to 4s.—that the carriers must be reduced in price 1s. 6d. or 2s. a ton, and which latter class cannot help themselves having their "stock," which must otherwise be sold, or eat their heads off. All this will the adventurer do, but he will not boldly stand forward on public and patriotic grounds, although, by so doing, he would advance his own interests. Our correspondent is quite correct in his assumption as to the comparative prices, but, as evidence of the use to which the sulphur ores of Wicklow alone (five mines) has been used, within the past seven months, it is only necessary to refer to our last page, whereby it will be seen that 42,932 tons have been shipped during that period. An import duty of 5s. per ton (although in amount the same as the manufacturer was subjected to, being 4s. 10s. that of his Volcanic Majesty, and 10s. that of our home duty) appears to us to be far exceeding that necessary to be imposed for the protection of the home miner. We require only fair play and fair remuneration; but with a jobbing set, like the virtuous King of the Sicilies and his sulphuric agents, it is indispensable that Government should step in on behalf of our mining population. We shall be ready again to take up the cudgels, and will prepare a third petition to Parliament. Will, we ask, any one second the movement by affixing their signatures or meeting the question in the House?—we fear not. To the closing paragraph of our correspondent's letter we hardly think it fair to reply. We may, however, in general terms say, that the sulphur ores of Wicklow are most in repute, both from quality and the cost. The shipments this year will exceed 80,000 tons, yielding on an average 30s. to 35s. per ton. The price, put on board at Wicklow, has varied from 20s. to 25s. per ton.]

## CAUSE OF EXPLOSION OF STEAM BOILERS.

## TO THE EDITOR OF THE MINING JOURNAL.

SIR,—This subject, which has long occupied the unwearied attention of the scientific part of the community, will, perhaps, to the latest period of posterity, retain some of its mysteries. In the mean time, much satisfaction is constantly afforded by those whose labours, fearless of fatigue, are bringing to light the hidden things of darkness, which tend to prevent the sacrifice of life, the misery of widows and orphans, and consequently afford protection to property—and if your correspondent can afford any assistance to unfold the secret his purpose will be answered.

A circumstance took place, I remember, in the west of Cornwall, about two years since, which may assist the working engineers (or engine men) in their precautions. In a mine where two boilers were employed to raise steam to one engine, it occurred one Saturday, when the working of the machine was suspended to repair the pit-work, as also the in-door work of the engine, which is commonly done in that district every week, that the engine men closed their dampers, threw open his fire doors, and attended to his work after trying his gauge of feed in both boilers, which was found to be correct—it should be remembered that feed had been going into both the boilers for the last ten or twenty minutes prior to the machine going idle, which suspension continued for the space of two hours—by this time the engine men receiving notice from the suspension to prepare to work, prepared to revive his fire to recruit steam, but, before he did this, fortunately for himself and others with him, he again

tried the gauge of the feed in his boilers, and found the water had dropped below his gauge in one boiler, and over flush in the other, which produced some apprehension as to the "cause," and what would be the consequence. It all happened, however, in good time, the truth proved simply this—that the boiler which had emptied itself of feed possessed a higher pressure of steam than the other boiler, the gimblet valve belonging to which refused to be closed water-tight, owing to a small chip of wood or hemp that had secured itself under it at the time, consequently the pressure of steam being greater in this boiler than the other, forced the feed from one to the other till it had found an equilibrium. Had the engine man revived his fire under these circumstances, as is commonly the case, without a second time trying his gauge, the boiler must of necessity exploded, and the "cause" would never have been known, as the engine man himself could have been clear, on an oath, that there was no deficiency of feed, inasmuch as he had recruited a supply previous to the engine going idle.

If my memory serve me rightly, the explosion at the Cornish Mines took place a short time before this occurrence, and it had been observed that the engine man asserted as fact that feed had been supplied a short time before the accident took place, and that the cause could not be attributed to a want of feed. I ask, is it not possible for an engine man to set his feed plunger to feed the boiler, and for it to have the contrary effect when both his feed valves are chipped, which can only be detected by trying the gauge at the boiler? If I have anything to say to engine men, it is, "mind your gauge, my boys." I am, Sir, your's, &c.,

Wicklow, Sept. 7.

A CORNISH MINER.

[All letters treating on subjects of a practical nature, and which, in themselves, are of such infinite importance affecting the preservation of life and property, will ever find ready insertion in our columns. The letter of "A Cornish Miner," who appears to be enjoying the beauties of the scenery of the county of Wicklow, or more probably engaged in developing her riches, and "living" on the produce of her sulphur mines, may induce others, who from a residence at home ("West") within the past two years, possess the means of rendering further information on the subject. Will "A Cornish Miner" oblige us with a little Irish news.]

## DURHAM COUNTY COAL COMPANY.

## TO THE EDITOR OF THE MINING JOURNAL.

SIR,—On my return home, I observe, with no small astonishment, your report of the proceedings of the meeting of the Durham County Coal Company, with reference to myself. As you have thought proper to publish these proceedings, you will not, I am sure, withhold from me the opportunity of vindicating myself through the same medium. I shall confine myself to a simple statement of the facts, bearing on the matter and referred to at the meeting. My absence from that meeting, I would just say, was unavoidable, or the rev. gentleman, who took such a conspicuous part at the meeting, would not have had quite so much his own way. Before the meeting, I received a notice from the said rev. gentleman, stating that he intended, at the meeting to be held on the 31st ult., to propose my removal from the direction, and assigning, as the only reason, my being a shareholder in, and the fitter to, the Northern Coal Mining Company. Finding that other more important engagements would prevent my attending the meeting on the 31st, I placed in the hands of the chairman, at the last directors' meeting, and previous to the 31st, a letter, resigning my office as director, of which the following is a copy:—

To the chairman of the directors of the Durham County Coal Company.

DEAR SIR,—I find that an impression has gone abroad amongst the shareholders of the company that I am in some way connected with the parties who sold the collieries to the company; and, consequently, am opposed to any legal proceedings against those men to recover what is justly due from them to the company, for fulfilment of contracts, and, therefore, ought not to have a seat at the board of directors; therefore, I do hereby resign my directorship—this being the last regular directors' meeting previous to the general meeting, and which will afford the directors an opportunity of selecting some one more suitable for the office. I must, indeed, I cannot imagine how such an idea can be entertained by those who know the extent of my interest in the company. I regret I shall not be able to attend the general meeting on the 31st ult., but it is my intention to write a letter, to be read at that meeting, on the subject of the future management of the company.

I remain, your's, &c.,

THOS. C. GIBSON.

And stating, at the same time, that my sole reason for so doing was, that I could not be present at the meeting on the 31st, and would not allow any discussion to take place on such a motion, when I was not present to defend myself.

At the urgent request of all the directors then present, and who expressed their unwillingness to lose my services as a director, I consented to remain in office, provided that the motion of the rev. gentleman was not brought forward—but, for the reason I have before stated, that I would not allow any discussion to proceed in my absence. In the event of the motion being persisted in by that gentleman, my resignation was to be final and unconditional. I am, therefore, exceedingly surprised that the motion should have been allowed to proceed, and that other grounds of complaint should have been introduced by the rev. gentleman, as well as the one stated in his letter, as, in my absence, there was no means of reply.

I am not an original shareholder in the Durham County Coal Company, neither am I in the Northern Coal Mining Company, nor had I one title of interest in any one colliery, directly or indirectly, sold to either of these companies. I did not become a shareholder in the Durham County Coal Company until it had been two years established; I now hold about 500 shares—nearly one-tenth of the whole company—and, I believe, equal to, if not more in number and value, than the rev. gentleman's and all his parishioners who voted with him on the occasion. It was not until I had been asked many times that I consented to stand as a director; but I do think it a hardship, with the large interest I hold in the company, on any such grounds as these stated by the rev. gentleman, to be excluded from the management altogether. The chief circumstance, however, to which the rev. gentleman referred (and for which, Mr. Loeman, the seconder of his motion, would have opposed it) was, that I had purchased of the Northern Coal Mining Company part of the five-quarter seam at Cragwood, which they assume to have been improperly alienated from the Durham County Coal Company.

My answer to any charge founded on this circumstance is brief and simple. At the time when I made the purchase of the Northern Coal Mining Company, I was not a director in either of the companies, but a large shareholder in both; and it was only after repeated applications made to me by the directors of the Northern Coal Mining Company that I agreed to become the purchaser. Now, Sir, it is really too bad that a bond fide purchase made by me of the Northern Coal Mining Company should be made matter of accusation against me.

The rev. gentleman's reference to remarks reported to have been made by me at a dinner party I do not consider worthy of notice—I simply state facts, which cannot be gainsaid, and leave it to the public to determine whether my rev. friend has not gone somewhat out of his vocation in what he has done, and whether such proceedings are calculated to promote the best interests of the company or not. With these remarks,

I remain, Sir, your obedient servant,

Newcastle-upon-Tyne, Sept. 7.

THOS. C. GIBSON.

[Our correspondent is right in assuming, that having given insertion to a report of the proceedings of the Durham County Coal Company, in which his name is mentioned, we shall readily afford him the opportunity of vindicating himself through the same medium. The "explanation" appears to us to require either a more perfect knowledge of circumstances than we possess, or to be of an unsatisfactory nature. In the first place, we find that Mr. Gibson received an intimation antecedent to the meeting, that it was intended to propose his "removal from the direction," the only reason, however, assigned, being that of his being a shareholder in, and fitter to, the Northern Coal Mining Company. Mr. Gibson tells us, that in consequence of the receipt of such intimation, which confined the charge thus simply, he addressed a letter to the chairman of directors of the Durham County Coal Company, stating "that an impression had gone abroad amongst the shareholders of the company," that he was in some way connected with the parties who sold the collieries to the company—and, consequently, "opposed to any legal proceedings against those men, to recover what is justly due from them to the company," and, therefore, that he (Mr. G.) ought not to have a seat at the board. Accordingly, Mr. Gibson resigns his seat, to "afford the directors an opportunity of selecting some one more suitable for the office"—at the same time, positively dropping the charge, and expressing his surprise that any one should have suspected such a thing. Now, taking the words of the Rev. Mr. Dixon's letter by way of intimation to Mr. Gibson, of the alleged intention on his part of submitting to the meeting a motion, having for its object the removal of that gentleman from the office of director, which, according to Mr. Gibson, referred only to the circumstance of his holding shares in, and being the fitter to, the Northern Coal Mining Company, it does seem somewhat strange, and certainly beyond our comprehension, why Mr. Gibson should thereupon write a letter to

the chairman of the directors, to the effect that, finding an impression had gone abroad amongst the shareholders of a distinct and different nature, he was on such account resigned his office. This, we apprehend, is not "the truth," the whole truth, and nothing but the truth," for certain questions put to Mr. Dixon as to the five-quarter seam, the report of Mr. Dixon, the absence of any information at a former meeting when Mr. Gibson was present, the purchase from the Northern Mining Company, and other little matters into which we have not space to enter in our present Number, are in themselves sufficient to convince us that not only was it "not before, but worse was left behind." Our object, however, on the present occasion, is merely to canvas the letter of Mr. Gibson—while the "doings" of the Northern Mining and the busy Mr. Dixon, as they have been by their vicar, must be left for another opportunity. Proceeding onwards in reviewing the letter before us, we find that "at the urgent request of all the directors then present, and who expressed their unwillingness to lose my services as a director, I consented to remain in office, provided that the motion of the rev. gentleman was not brought forward," and accordingly such resignation was understood to be of a conditional nature, and dependent on the rev. gentleman withdrawing his proposed motion—that is to say, if the proprietors assembled will not turn me out I will retire—the power of giving force to such resignation, as we understand, being with the directors, those gentlemen who earnestly requested him to remain in office, and who withheld the letter of resignation. Now, without knowing who these said directors were, it does appear to us that they played an unfair game. If they did their duty to the shareholders, that is assuming that the meeting arrived at a proper conclusion in electing Mr. Gibson from office, they could not have urgently requested him to remain; the withholding of the letter at the public meeting, and a little bye-play observable, assure us that the host of directors "then present" either were false to Mr. Gibson or to the shareholders. We think Mr. Gibson has, in this instance, fair grounds to complain. His resignation was sent in, he was dissuaded by his co-directors from rendering it final, but it was to be so understood if that motion was proposed. We do not say that a trap was laid for the gentleman, but in this part of the business he was not fairly treated after his letter of resignation. That he ought to have been present there can be no doubt, but having a late example in a Member of Parliament and alderman of the city of London—Mr. Alderman Humphrey—we are not so much surprised he should have fallen into error. Mr. Gibson next states that he is not an original shareholder in the Durham County Coal Company, nor in the Northern Coal Mining Company, nor had he one title of interest in any one colliery, directly or indirectly, sold to either of these companies. Now, this may be, and we doubt not it literally true, and a perusal of the gentleman's own words will, doubtless, satisfy the shareholders that such is the case, and, most certainly, we are not prepared to deny the correctness of Mr. Gibson's assertion; but the gravamen of accusation comes out a little further on, whereby it appears that Mr. Gibson, if not possessed of "one title of interest" as a "seller," appears to be somewhat mixed up with certain questions affecting such collieries as a "buyer," and here we must direct attention to Mr. Gibson's reply to the charge, which he says is "brief and simple"—"brief" it is, and "simple" must those be which such explanation will satisfy. We have really carried our observations to no great a length, that we must here close, calculating upon Mr. Gibson's letter affording us food for the mind next week, in bringing us other communications elucidatory of the actual position of affairs.]

## SUGGESTION FOR IMPROVED VENTILATION.

## TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Amongst the various subjects connected with mining which are so ably handled, or discussed, more properly speaking, in your valuable Journal, it appears to me there is no one of greater importance than the ventilation of mines, and the adoption of other safeguards against those appalling catastrophes, which have, unfortunately, been of too frequent occurrence in the coal mining districts of the North of England, where sometimes from 50 to 100 human beings have at once in a moment lost their lives by the explosion of fire-damp. Several valuable papers on ventilation appeared in the *Mining Journal* a few months since, and I am satisfied that everything has been done to render that system perfect. It has, however, frequently occurred to me that the system is bad, because it requires the fire-damp, or carburetted hydrogen, to be mixed in certain proportions with oxygen, or atmospheric air, to produce an explosive mixture. By passing a current of fresh air through a great extent of workings, where at various points pure carburetted hydrogen is issuing from the coal, there is every likelihood that an explosive mixture will be formed before they escape from the mine, when, should it come in contact with the flame of a candle or lamp, an explosion is the consequence.

I observe that a correspondent has lately proposed to clear mines by occasionally exploding the gas through the means of electricity, which no doubt might be accomplished without danger, and would prove effectual. But there might be some difficulty in clearing the mine afterwards of the choke-damp (carbonic acid), the result of the explosion. Another correspondent, some time since, suggested a plan for burning the gas in a small iron chamber, admitting the gas through wire gauze to meet the flame of a lamp inside, and forcing the products of combustion into a puddle of lime and water to take up the carbonic acid. There may be some practical difficulty in the way here, otherwise the plan seems ingenious.

I have been induced to take the liberty of addressing you to convey an opinion upon ventilation, suggested to me lately when using a fan-blower to throw air to some distance. I got for the purpose canvas tubes, made the full size of the area of the fan. These I covered with rosin and lined oil, melted together, which made the canvas air tight. I brought the ends of two lengths to meet together upon a wooden hoop or frame the size of the tubes, laying one over the other, tying a piece of twine round, which made a tight joint. The fan was merely worked by hand, and I was astonished at the powerful blast of air thrown by it to a great distance. While thus engaged, it occurred to me that the plan might be applied to ventilate mines. A good-sized fan set in a part of the workings where the air was freshest, and canvas tubes laid from it to the bottom of an open shaft, two stout boys would in a few minutes renew the air in that part, driving all the foul air from the workings, without its being mixed with the purer atmosphere of the other parts, or the possibility of meeting any flame to explode it. All the materials required are portable, easily removed and set in motion, and by no means expensive.

I give the idea simply as it occurred at the time.—Allow me to subscribe myself

AN ADMIRER OF THE "MINING JOURNAL."

Llanelli, Sept. 7.  
[We are obliged to our correspondent for the suggestion conveyed in his letter, although such we believe to be by no means novel. As the subject, however, has been so ably handled by our correspondents, we feel that we may safely leave it to their hands. We are glad to find attention again directed to an improved mode of ventilation of mines, and it will afford us increased pleasure to learn, that one or other of the plans already submitted through the *Journal* has been adopted, and found to prove effective in its application. We meet with many suggestions, and regret that the coal-owners do not subscribe a sum for practically developing the advantages or disadvantages of the various plans submitted.]

## SMALL CHANGE.—DUTY OF CORNISH ENGINES.

## TO THE EDITOR OF THE MINING JOURNAL.

SIR,—My object in directing public attention to the above subject was not to excite any hostile feeling against the adventurers in mines, nor against captains' clerks, or bankers; as I have said, the bankers are a great benefit to mining as well as commerce, by the conversion of fixed property into floating capital, as it is not often, comparatively, that the income are beyond the needs. Whilst there are takers of "pitches" in "bals," by tribute or tutelage, there will ever be payment in gross, unless the share of each be made a matter of competition at the account-house. It is much easier to discover a wrong than to find a remedy for any ill that flesh is heir to; but it has occurred to me that small changes, payable with interest from the time they are drawn, would meet the difficulty. It would be the same to the adventurers as if the advance were made in notes, and interest charged thereon; and the same to the banker as if his notes were in circulation. There would be a little trouble in counting the small cheques for 10s., 15s., and 15s. each, which might be countermanded and printed on cards (not re-issuable). Of course notes could be paid to merchants, &c., for large amounts, as now, and silver for very small.

It gives me great pleasure to find that my suggestion as to the effect of the sudden or swift movement of the solid plunger, and the slower movement of the fluid column in increasing the duty of Cornish engines, has, though unacknowledged, been received as a scientific principle by the account. Floundering piracy from periodicals is now quite a legalised traffic.

I remain, Sir, your's, &c.,

Protonotary, Sept. 6.

ALFRED T. J. MARTIN.

[We cannot agree with our correspondent as to the efficacy of his remedy. Cheques, with interest thereon, are decidedly objectionable, even were they a legal tender. Surely, gold and silver may be obtained, when necessary, for the payment of the useful metallic products of copper and tin. It is no dif-



scarcely a letter, as our correspondent seems to think, to make "a computation at the account-house." We think not—system would do much, at least the question is worthy of being tested, as to its practicality or otherwise. We are glad to learn that the suggestion of Mr. Martin, with reference to the solid propellant, has been adopted. We presume, when that gentleman wrote his letter for the *Mining Journal*, he contemplated the application of the principle he advocated, believing it to be correct, and calculating on the publicity which would be given to his suggestions through our columns.

#### DURHAM COUNTY COAL COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—You complained of my last two letters addressed to you, respecting the "doings" of the B's, not containing any new facts, and declined to insert them in consequence. To this I did not demur, but you must allow me to remark, that the whole of the facts, from the first, were comprised in a nut-shell—in one simple and comprehensive fact, that Barrett and his knavish accomplices had conspired to defraud the shareholders of this company, and that they had, unfortunately, proved too successful. To this I and others, not forgetting your editorial self, could add nothing in the shape of fact that was new; all that we could do was to hold up the several parties—swindlers, I would say—to public reprobation and scorn in general terms; and I regret, for your own sake, that you did not give your correspondents, as well as your own pen, full swing for a little time longer, because I heard, whilst in the north, in July last, more than one person intimate that you were not actuated by the purest motives in dealing with this matter. On inquiry, I found this impression was produced by your altered tone towards Botcherby, after he had called upon you personally respecting his bankruptcy. That you erred in implicitly believing all he told you on this head, I have no more doubt than that the above insinuations are as unjust as they are unfounded—and so I told the parties.

The affairs of the company, as detailed to the meeting at Darlington, on the 31st ult., show that all is not yet lost to the shareholders; but that, under the present improved system of management, it may yet be made a profitable investment. For this altered state of things, we are chiefly indebted to the searching exposures that have been made in your columns of the "doings" of the B's, &c. Let the proprietors keep the present directors up to the mark—force upon them the total abolition of all useless and extravagant appendages—such, for instance, as the London Board, one step towards which has already been taken—and no doubt the concern will, ere long, be in a flourishing condition. We still want a few particulars from the ex-director, Mr. Gibson, in explanation of his connection with the five-quarter mine. In conclusion, I could not help smiling at the simplicity of one Mr. Stockdale, when he stated, that the local preachers declined to get Barrett removed from the Methodist communion, because, as they asserted, no charge had been brought against him. Mr. Stockdale must be a simple-minded man to expect anything of the kind. Messrs. the local preachers have partaken of too many splendid gorges at the well-spread table of "Brother Barrett"—and no doubt anticipate as many more—to take (to themselves) so suicidal a step. Of all the cant of this canting age—the cant of religion is the most disgusting.

I am, Sir, yours, respectfully,

DUNELM.

London, Sept. 9. The letter of "Dunelm" requires but little notice; the main points being—a charge against ourselves, a note of admiration on the change in the affairs of the company, a note of interrogation to Mr. Gibson, and one of exclamation as to "the simplicity of one Mr. Stockdale." We will endeavour to dispose of these points "in a brief and simple manner," as our correspondent, Mr. Gibson, says, in his letter inserted in our columns of today. Firstly, as to ourselves, and it is only right that we should follow the example of "Dunelm," and begin with No. 1. Our correspondent admits the correctness of our doctrine, in declining to insert his two letters, as containing no new facts; while, at the same time, he tells us, that the whole, from the first, were comprised in a nutshell. He now writes again, and we ask him, might not all the facts be brought forward by merely observing, that "Dunelm" directs our attention, we pass them by, merely observing, that, as we are not influenced by any party, we felt it to be our simple duty to express those opinions entertained on the statement made by Mr. Botcherby. Our columns were open to remarks thereon, some of which, if we mistake not, appeared. We have held no personal or private communication with the individual, and as Mr. Botcherby gave us his name, and authorised the publication, we only performed our duty. As regards the value of the concern under honest and economical management, we never raised or entertained a doubt, it may have been purchased too dear, it may now even be sold too cheap, on this we offered no opinion. We take the words of our correspondent—"Let the proprietors keep the present directors up to the mark." Now, with reference to Mr. Gibson, his letter, which we insert this week, should speak for itself, and as to Mr. Stockdale, we think "Dunelm" has wasted his time; and certainly occupied our space, with a degree of simplicity only equalled by the gentlemen of whom he complains. Personal allusions should always be avoided, and more especially when the subject of religion is brought forward as associated with the character of an individual. We will not trust ourselves on this, but recommend "Dunelm" to give us more facts and less words.

#### ON THE CIRCUMSTANCES UNDER WHICH THE EXPLOSIONS OF STEAM-BOILERS GENERALLY OCCUR, AND ON THE MEANS OF PREVENTING THEM.

(Continued from our last.)

Mr. Seaward was glad to find the idea of the explosions of boilers arising from the formation of hydrogen gas, so successfully combated by Dr. Schaffhausen and Mr. Parkes. He perfectly agreed with the former in his opinion of the causes of the majority of explosions. In all that he had witnessed the effects of the lower parts of the boiler appeared to have suffered most. He was at the Polgrove Mine immediately after the explosion there, when seven persons were killed. In that case, he was told that the boilers were moved a distance of seven or eight feet from their seats, before any detonation was heard. At the Hurton Mine (which Trevellick had undertaken to drain for a certain sum) an engine with a cylinder of forty inches diameter was erected immediately over the shaft. Its power was not sufficient for the work required; the pressure of steam was, therefore, gradually increased as the depth became greater. At length the boiler, which was of an immense length, was observed to have a constant tremulous or shivering motion at each stroke of the engine, and eventually exploded. It appeared that there were fewer explosions of boilers in London, in proportion to the number employed, than in any other district. One reason for this might be, that fuel being expensive, it was used economically, by maintaining a slow rate of combustion, and a regular supply of steam, avoiding the intense action of the fire, which, in the event of the engine standing still for a time, had a tendency to produce an explosion.

Mr. Parkes attributed the small number of explosions of boilers to the vessels on the Thames to the practice of allowing the steam to set upon the safety valve, instead of the engineer lifting it when the engine was stopped, as an inland vessel in the north. The sudden closing of the valve had, in many cases, produced an explosion. While on this subject, he felt it necessary to comment upon what he considered fallacious reasoning of Trevellick on the formation of hydrogen gas in boilers. The passage he alluded to was enclosed thus—"Hydrogen gas may be, and frequently is formed in steam-boilers through the water being in contact with a part of the boiler which is red-hot; and it seems to be regularly produced during the formation of steam at very high temperatures." Dr. Schaffhausen had shown, that the effect of water coming suddenly in contact with a part of the boiler which was red-hot, was only to disengage instantaneously a large volume of steam of very high velocity. Mr. Parkes concluded, that an influence of the sudden production of hydrogen gas in a boiler under such circumstances was unknown, and he most decidedly doubted the possibility of such an occurrence. Again, allowing such an event to be possible, an explosive mixture of gases must be formed before the boiler could be destroyed; and this could not take place so long as a sufficient quantity of water was present, from which any considerable quantity of steam could be generated.

Mr. Dunelm did not entirely agree as to the non-formation of hydrogen in boilers under peculiar circumstances. He observed the explosion which occurred in the iron works, on the coast of the United States with wet sand, to be analogous. He believed, that when water was thrown suddenly upon red-hot plates, decomposition did occur. He had once observed a wagon-shaped boiler which had exploded; the top was three to four inches, and the bottom was depressed throughout its entire length. He believed that, by lateral firing, the water had been nearly all evaporated; the bottom had then become red-hot, the pressure of the steam had forced the bottom downwards when weakened by the heat; the water on each side then suddenly flowed on to the heated part, and an explosion instantly occurred. Mr. Seaward had known instances of the internal tube of a boiler being collapsed without any injury to the external part or body of the boiler. He had always ascribed such occurrences to a deficiency of water; but Dr. Schaffhausen's explanation of the rapid transmission of heat through the water in the bottom would sufficiently account for the effects which had been observed. Mr. Dunelm believed, that in almost every case the unequal pressure upon the sides of

the tube, arising from its not being perfectly cylindrical, was the cause of its collapsing. Mr. Field was inclined to attribute all the explosions which he had witnessed to simple pressure.

When steam, or a small quantity of water, was suddenly admitted into a dry heated vessel, hydrogen gas was readily formed. He had made several sets of apparatus for the purpose. A strong wrought-iron tube was heated, and being filled loosely with fragments of iron turnings, steam was introduced, and the gas was rapidly evolved. He agreed with Mr. Parkes in considering generally, the fallacy of the opinion of Trevellick, previously mentioned, as to the formation of hydrogen gas. Still, in a large boiler, almost dry, and of which a portion was red-hot, he conceived that, on the admission of a small quantity of water, hydrogen gas might be evolved.

The President was unwilling that this conversation should terminate without endeavouring to explain the cause of the elevation of the boilers from their seats. In his opinion, this might be satisfactorily accounted for by the action of atmospheric pressure. When an explosion took place in a boiler, a considerable body of highly elastic fluid was disengaged; a partial vacuum was thus created above the boiler, whilst the full pressure of the atmosphere was exerted beneath it. This would cause the boiler to rise from its seat, provided the atmospheric air did not at the same instant rush into it, in which case the bottom would be pressed downwards, and the upper part being torn asunder, as had been described, would then rise into the air with the elastic fluid. When it was considered that the superficial area of these boilers was about sixty square feet; that the pressure of the atmosphere was nearly one ton per square foot, and that the weight of the boilers was only eight or ten tons, it would be apparent that the cause was quite adequate to the effect, with a very partial vacuum or inequality of atmospheric pressure. The case was analogous to those in which light bodies were raised into the air by whirlwinds. He referred also to two cases of an equally uncommon nature, which had lately come under his notice professionally, and which he considered to arise chiefly from inequality of atmospheric pressure. The first occurred at the Plymouth Breakwater during the great storm in the month of February, 1838, when several of the largest granite blocks, weighing from three to eight tons each, composing the surface or pavement of the breakwater, which, although squared and dove-tailed into the structure, and embedded in excellent cement to the extent of their whole depth, and thus forming a solid mass, were torn from their positions, and projected over the breakwater into the Sound. He attributed this to the hydrostatic pressure exerted beneath the stones, at the moment when the atmospheric pressure above had been disturbed by the masses of water suddenly and rapidly thrown upon the surface of the breakwater. Blocks of stone were thus often carried to a great distance, not so much by the waves lifting them, as by the vacuum created above them by the motion of the water, which exerted at the same time its full pressure from below.

The other case occurred during a storm in the year 1846, when the sea door of the Edgworth Lighthouse was forced outwards, and its strong iron bolts and hinges broken by the atmospheric pressure from within. In this instance he conceived that the sweep of the vast body of water in motion round the lighthouse had created a partial and momentary, though effectual, vacuum, and thus enabled the atmospheric pressure within the building to act upon the only yielding part of the structure.

#### PROCEEDINGS OF PUBLIC COMPANIES.

##### COMBIMARTIN AND NORTH DEVON LEAD AND SILVER MINES.

The general annual meeting of the shareholders of this company was held at Comblartin, on the 18th ult.

J. G. MAXWELL, Esq., in the chair.

The advertisement convening the meeting having been read, the following directors' report was submitted:—

#### REPORT.

The ore sold during the last year has amounted to 6701. 6s. 7d.; we have now also about 6000 worth of ore at the surface, and a full cargo will shortly be ready for market. We have been enabled, from the proceeds of the mine, since we last met you, to erect the new steam-engine, at about 6000. cost; a new boiler and boiler-house, a large engine of about 2000. cost; and to put up a wheel and three stampmills at about 2000. cost; a material saving has been effected, as we anticipated, by our using steam power instead of horse, to draw ore and dead to the surface. It has been our object to open the mine as extensively as possible, and we have lately succeeded in making several important additions to our staff, in consequence of which we have commenced a cross cut to reach a very promising lode on the south-west side of the valley.

We have been assisted by the gentlemen of the committee appointed by you at our last general meeting, in investigating the cases of several parties whose shares had been declared forfeited; in consequence of such investigation, fifty-four shares have been reinstated, and all forfeitures confirmed, leaving 1839 shares in the company. The solicitor of the company has been instructed by us to meet any proceeding which may be instituted against us by the holders of any forfeited shares. We are gratified in being enabled to state to the company that our exertions during the past twelve months have been attended with success, and that in our opinion the shareholders of the ensuing year will be empowered to declare a dividend of 11. per share previously to Christmas next, reserving, at the same time, a sufficient fund to carry on the works of the mine on an enlarged and liberal scale. We have most pleasure in bearing testimony to the industry and ability displayed by our captain in conducting the works of the mine.

The captain's report was then read, as follows:—

Maxwell's shaft, since our last meeting, August 15, 1845, has been sunk from the thirty-seven to the fifty-seven fathom level, and a cross-cut driven twelve fathoms; there are about two inches more to drive to cut the lode, which we are doing with all possible speed. The directors' engine-shaft is sunk from the thirty-seven fathom level, three fathoms under the fifty-seven fathom level, and we are using every exertion to get to the sixty-seven fathom level. At the forty-seven fathom level we extended the cross-cut eight fathoms, and cut the lode, after driving on the lode eight fathoms we discovered ore, which contained thirty-six fathoms in length, and a promising lode hangs down in the bottom of the level one-third of the way to the present level. Two winches have been sunk from the thirty-seven to the fifty-seven fathom level, and another is in course of sinking in each of those winches; the lode has produced ore. At the fifty-seven fathom level we have driven from the directors' shaft fourteen fathoms south; the lode is getting larger and kinder, with some spots of ore in it. After extending this level about five fathoms further, we shall under the ore while in the forty-seven fathom level. There are two winches sinking under the forty-seven fathom level, south of Maxwell's shaft; in those winches the lode is kinder, and promising ore. The twenty-seven and thirty-seven fathom levels are driven south to Thomas's shaft; this level has been done for ore. Thomas's shaft is sunk from the thirty-seven fathom level to the thirty-seven fathom level. The lode is nearly all taken away above the thirty-seven fathom level.

The auditors stated that they had examined the accounts from August, 1840, to July, 1841, and found them correct, with the exception of two bills, showing a slight balance in favour of the merchants; there was also a trifling over-payment, which had been placed to the debit of a future account. There was a clear balance in favour of the company of 2199. 15s. 4d.

A variety of resolutions were then passed, having for their object the expression of a unanimous feeling of confidence in the directors and other officers of the company, when, thanks having been voted to the chairman, the meeting adjourned.

##### LONDON AND CROYDON RAILWAY.

The twelfth half-yearly meeting of the proprietors of this company was held at the London Tavern, on Tuesday, the 7th inst.

W. A. WALKERMAN, Esq., in the chair.

The advertisement convening the meeting having been read, the chairman addressed the common sense of the company to the register of proprietors. The SECRETARY then read the report, which congratulated the proprietors on the partial opening of the Brighton line, and the immediate prospect of its entire completion. A great disinclination in the expenditure of the half-year had been taken place, but there was also a decrease of receipts from passengers, which was attributed to the high toll payable to the Greenwich Company. On that part of the railway, independent of the Greenwich toll—viz., between Croydon and New Cross, the directors have reduced the toll; the result has been that the number of passengers between those stations has been doubled, as compared with July, 1840. The accession of the Brighton Railway encouraged the directors to hope that at the next general meeting they would be able to recommend a dividend, while the expected opening of the South-Eastern line would not fail to lay open much further the prospects of the company. The total capital received by the company in the 31st of July, 1841, was £61,512. The coaching and carrying account for the half-year ended 31.7.42, and the expenditure was 13,440—leaving a balance of 48,072, to which was added a further balance of 7680, making 55,752. The number of passengers during the half-year was 31,569, first-class, 168,032 second class, 24,311 third class—total, 344,767 passengers. The toll paid by the Brighton Company to the Croydon Company, since the opening of the Brighton line, was 13,265.

The CHAIRMAN then entered at some length into an explanation of the report, and stated that the toll here at the New Cross station had much increased—for instance, in August, 1840, the number of passengers were 6794, and in August, 1841, they had increased to 13,567, which, with the increase of the other parts of the line, showed an augmentation in passenger traffic amounting to 127 per cent. An important reduction had been made in the dues upon goods by the Surrey Canal Company for the South-Eastern Railway; these goods had gone by other channels, but, as the route by the Canal, South-Eastern Railway, and the London and Croydon Railway would not only be more expeditious, but cheaper, they might expect a great increase of traffic. The directors had made a reduction to meet the Canal Company. He then concluded by moving the adoption of the report, which, being seconded by Mr. REYNOLDS, was carried unanimously.

Mr. MAURICE entered at length into the disadvantages of low fares, and strongly recommended that the traffic of the line should be managed by the

Brighton Railway; he believed the directors to be men of integrity, but thought they had too much genius, and too little common-sense. He concluded, by moving—"That it is the opinion of this meeting that some arrangement could be come to with respect to the general traffic with the Brighton Railway which might prove mutually beneficial to both companies." Mr. MAURICE seconded the resolution.

A PROPRIETOR was quite sure that low fares would prove more profitable, and, with respect to giving up their railway after all the bother and expense they had had, he would not agree to any such proposition, for he felt assured that the Croydon Company could stand very well on its own bottom. He concluded, by stating that, as Mr. Maubert had spoken about the honesty and common-sense of the Croydon board, he was sorry he could not say as much for the Brighton directors. He wanted some of them, and was quite satisfied with the directors they now had.

Mr. WRIGHT would like to see how the Brighton directors manage their own affairs before the Croydon proprietors made them their masters—he was quite satisfied, and wanted no change of directors.

The CHAIRMAN would be obliged if Mr. Maubert would read the resolution which was to follow the one in hand, so that the proprietors might know what they were about.—Mr. MAURICE, after some demur, read a resolution, to the effect—"That a committee of twelve should be appointed from amongst the shareholders, to assist the directors, and decide upon any arrangement that might be proposed."

Mr. RICHARDS thought it absurd that a resolution should be proposed to carry out an airy castle, for there had been no proposals made on either side. He certainly believed that some arrangement might be come to with both railways, that would be mutually beneficial, but strongly opposed the motion, as it implied a want of confidence, and was, in fact, an actual vote of censure upon the directors; this question ought to be left to the directors. After some further remarks, he moved an amendment, to the effect—"That the directors had the perfect confidence of the proprietors."—Mr. KNIGHT, in seconding the amendment, observed that, if the purpose of the original motion was to give over the management of the Croydon Railway to the Brighton directors, it was most absurd; no man who was not a large proprietor in the Brighton would ever have thought of such a step; he trusted that the meeting would, by carrying the amendment, show their sense of the absurdity of the original motion.

Mr. MAURICE had the greatest confidence in the Croydon board of directors, but thought them too visionary, and was convinced they would try to quarrel with every company.

The CHAIRMAN, in a long speech, stated that if he thought that proprietors would pass such a resolution he should at once set it down as a want of confidence, and resign. The appointment of a committee of twelve to control six directors would ensure the passing of every proposal, whether injurious to the company or not. The idea of selling the Croydon Railway to the Brighton directors was most absurd; if the proposal had been made a short time ago, when they were in great difficulties, it might have been entertained, but for it to come now when they had plenty of money for everything he could hardly believe it possible that a Croydon proprietor could be so mad.

The honourable proprietor had doubted the common-sense of the directors, but he (the chairman) had sufficient ground for doubting him. He then read several extracts from the Brighton and Greenwich reports, which showed the anxiety of those companies to possess the Croydon line, and concluded, by stating that the directors would come to no important decision without consulting the proprietors.—After a few more observations the CHAIRMAN put the amendment, which was carried, there being only three hands held up for the original motion, and dozens for the amendment.

A conversation then ensued about the Brighton and Greenwich bills, which was concluded by Mr. KNIGHT moving the thanks of the meeting to the directors, for their zeal and attention to the interests of the company, which, being seconded by Mr. MAURICE, was carried unanimously.—The thanks of the meeting were then voted to the chairman, and the proprietors separated.

##### WEST LONDON RAILWAY.

The half-yearly meeting of the shareholders in the above company was held at their offices, Abchurch-lane, on Wednesday, the 9th inst.

The DEPUTY-CHAIRMAN of the board of directors in the chair.

Mr. THOMPSON (the secretary) read the following report from the directors:—

#### REPORT.

In pursuance of the resolutions passed at the adjourned special general meeting of the company on the 8th of April last, the directors took measures to leave to the proprietors the new shares created at that meeting for raising an additional capital of £6,000, to complete the line from the Grand Junction Canal and Great Western Railway to the Kensington Canal basin. The directors are sorry to announce that of the 20,000 new shares created, only 9000 were applied for by the proprietors, and the remainder to the public. Under these circumstances the directors did not feel justified in making any attempt to resume the works, although fully impressed with the importance of getting this portion of the line, as recommended by Mr. Stephenson, completed and brought into operation at the earliest possible period. The directors have considered whether any better plan for raising the additional capital required for this purpose could be devised, and they are still of opinion that the plan adopted is the best, and that every effort should be made to carry it into effect. It is, therefore, for the proprietors either to complete the subscription without further delay, or to take some other steps to prevent its eventual abandonment. The directors, however, have the satisfaction to inform the proprietors, that in conformity with the resolution passed at the last general meeting, they have succeeded in disposing of the remainder of Kynham Farm, for a sum which, together with that which had been previously sold, nearly equals the amount for which they have purchased the entire estate. Sir John Scott Little and Mr. Starch have been elected directors of the company, in the room of Mr. Macfarlane and Mr. Latham, who have resigned.

The following is a general abstract of the accounts laid before the meeting:—

BALANCES—JUNE 30, 1841.			
Balances brought down	£252 5 9	Bills payable	£771 18 3
Balances at bankers	1,147 16 4	Sundry creditors	4,565 9 10
Sundry debtors	4,431 13 0		
Total	£11,531 19 1	Total	£11,531 19 1

After some conversation the report was ordered to be received.—A long discussion followed, in reference to certain resolutions passed at the previous meeting of the proprietors held in April last, for the raising of the further capital requisite to complete the railway. On that occasion it was agreed to issue new shares, of the nominal value of 20s., at the low price of 21. per share. The total number of shares thus created was 20,000, but of these not more than 9000 had been subscribed for, of which number the directors had taken a large proportion; under these circumstances it was found impossible to go on with the works, as it was a condition that none of the money so raised was to be expended, unless all, or nearly all, the amount required were subscribed for. It was stated that the greatest deficiency of subscriptions had taken place at Manchester, not from any want of confidence in the railway, but from the pecuniary embarrassments of that locality.

Several resolutions were passed in reference to this matter, by one of which the deposits paid on the new shares subscribed for are to be returned to the parties making them. The scheme of raising money by new shares is not to be abandoned, but the directors are, in the interval between this date and that of the next meeting, to take advantage of any favourable change that may occur in the commercial prospects of the country. In the meantime the works are totally suspended.

A suggestion was thrown out in dispose of the line to one or other of the large companies with which it is connected—the London and Birmingham and Great Western. It was the general impression, however, that, in its present unfinished condition, it would not be taken up by either of those companies. The importance of completing and opening for traffic even a portion of the line was strongly urged, and the directors were empowered to apply the proceeds of a proportionate number of the new shares to the completion of the part extending from the Grand Junction Canal to the Uxbridge road, it being clearly understood that those subscribers only who might assent to these partial operations should have their money so applied.

It was mentioned that the directors had sold Kynham Farm for nearly as much as the whole estate had cost them, and had thus secured the land for about a mile of the railway for nothing.

A vote of thanks to the chairman and directors was (on the motion of Lord Kensington) unanimously passed, and the compliment having been duly acknowledged, the meeting broke up.

##### AYLESBURY RAILWAY.

The half-yearly meeting of the shareholders in this company was held at the Kingston Hotel, Kingston-square, on Thursday, the 9th inst.

T. FENDALL, Esq., in the chair.

The following report of the directors was read, and unanimously adopted:—

#### REPORT.

The directors have little to add in their communication to the shareholders, beyond the half-yearly statement of the affairs of the company, which is set forth in the enclosed abstract of the accounts. The directors have recommended that a dividend of 6s. per share being the same dividend as before for the fourth half-year, ending 10th June, 1841, be declared, and made payable on the 20th inst. The directors have the pleasure of reporting to the proprietors that the trade generally is increasing, and in according to this fact, the directors cannot but continue with regret the discontinuance of the London and Birmingham Company of that trade which had been applied to leave Kingston-square at twelve, and to return to the afternoon, for the chief purpose of conveying live stock for the convenience of the graziers of this neighbourhood, the trade in which was then gradually increasing, and the directors are of opinion that if these arrangements for facilitating the business of live stock had been persevered in, this important branch of the trade community of Aylesbury, and of a large surrounding district of country, would undoubtedly have been secured, affording as well present remuneration to the London and Birmingham Company, as also future advantages to the proprietors of this company.

The "capital account" showed the following general result:—







## MONEY MARKET AND CITY NEWS.

## CURRENT PRICES OF ENGLISH AND FOREIGN FUNDS.

Consols Money, 100 s	Dutch, 2 1/2 per Cent, 101 1/2
3 1/2 per Cent, 101 1/2	Portuguese, 5 per Cent, 101 1/2
5 per Cent, 101 1/2	Spanish, 5 per Cent, 101 1/2
6 1/2 per Cent, 101 1/2	Chili, 5 per Cent, 101 1/2
7 1/2 per Cent, 101 1/2	Colombian, 5 per Cent, 101 1/2
8 1/2 per Cent, 101 1/2	Mexican, 5 per Cent, 101 1/2

**SATURDAY.**—The public funds were not extensively dealt in, and money continued in the same demand, the sudden break in the weather also added to the gloom in the market.

Business was also slack in the foreign stocks, and at one period Spanish was quoted at 27 1/2, but subsequently rallied, and closed at 27 1/2; South American securities were quoted at a shade lower.

The share market was 4-1/2; South Westerns gave way 1/2, and Great Western 1/2, per share.—Colony Copper Mining Company, 57; Rhymney Iron Company, 19 1/2; London Joint Stock Bank, 17.

**MONDAY.**—The business transacted in the public funds was of a very limited character, and prices generally remain the same as last week. The dealings of the jobbers, but it seems to have found a worse market than has been current for the last three days, this may be ascribed to those who had purchased having now evinced an anxiety to sell, as if they believed that it had reached its maximum value. The Active off 27 1/2; the other stocks were not much dealt in, neither were they affected by this reaction, for it was all along anticipated.

The railway share market has shown depressed symptoms, although the amount of business done was small.—Australian Bank, 54 1/2; ditto new, 15; London Joint Stock, 17 1/2; Provincial of Ireland, new, 15; Union of Australia, new, 19 1/2; ditto old, 19 1/2.

**TUESDAY.**—Money continues in considerable demand, and the funds have had but one quotation throughout the day, scarcely any business having been transacted. Consols for Money closed at 101 1/2, and 101 1/2 for the Account. Exchequer Bills declined 1/2, being quoted at 111 1/2 to 112, per cent.

No extensive dealings took place in the foreign securities, nor were they made of a character to act upon the market, which remains in precisely the same state. The foreign exchanges were rather lower to-day, but particularly in reference to the demand for bills. Amsterdam, upon which there was an increase of 3/4, closed 124 1/2; Paris, short, 25 1/2 to 26 1/2; and Hamburg, 124 1/2 to 125 1/2.

The premium on gold at Paris is 7 per mille, which, at the English Mint price of 37 1/2, 194, per ounce for standard gold, gives an exchange of 25 1/2, and the exchange at Paris on London at short being 25 1/2, it follows that gold is 1/2 per cent. higher in London than in Paris.

By advices from Hamburg the price of gold is 478 1/2 per mark, which, at the English Mint price of 37 1/2, 194, per ounce for standard gold, gives an exchange of 47 1/2, and the exchange at Hamburg on London at short being 47 1/2, it follows that gold is 1/2 per cent. higher in London than in Hamburg.

The share market continues very flat, with a tendency to still further decline. South Westerns and Great Westerns gave way 1/2, per share. Brightons were also rather lower.—Australian Bank, new, 15; Colonial, 30.—Australian Agricultural Company, 38.

**WEDNESDAY.**—The public stocks were flat again, without, however, any other assignable cause than the small amount of business transacted.

The business transacted in the foreign market was wholly confined to Spanish Actives. In the early part of the day they were quoted at 27 1/2, but subsequently gave way, having receded to 27 1/2; at the termination of business they were rather lower, but at quotation. South American securities were also a shade lower, with the exception of Brazil stock, which, on the contrary, was quoted at an advance of 1/2 per cent.

There was more business done in the share market, but at lower prices—the quotations of most of the lines having receded 1/2, per share.—Australian Bank, new, 15; London and Westminster, 24 1/2; ditto new, 16 1/2; Union of Australia, 19 1/2 to 20 1/2.

**THURSDAY.**—A slight improvement took place in the English funds, Consols for the Account being quoted at 101 1/2 buyers, but the business transacted was extremely limited. Exchequer Bills were the same as yesterday, being quoted at 111 1/2 to 112, per cent.

In the foreign house, Spanish Actives were depressed in the early part of the day, in consequence of the receipt of lower prices from Paris and Antwerp, and the quotations receded to 27 1/2, but some rather extensive purchases, however, having been effected, prices advanced to 27 1/2, at which they closed. Colombian stock was also a shade higher.

In the share market, Great Westerns advanced 1/2, per share, but in the other lines of railway there was no material alteration.—London and Westminster Bank, new, 16 1/2.

**FRIDAY.**—The business in the public funds to-day was not extensive, but owing to the easier state of money, which was obtainable at 4 per cent. in the afternoon, and the prospect of better weather, the quotations of the leading English stocks were nearly 1/2 per cent. better than yesterday. Exchequer Bills also improved in premium. Consols closed at 101 1/2, for the Account, 101 1/2 to 102 1/2; Exchequer Bills, 111 1/2 to 112, per cent. In the foreign stock market, Spanish Actives were firm in the early part of the day, the quotation having advanced to 27 1/2; subsequently, however, some sales were effected, which caused a decline in prices to 27 1/2, and the lower quotations received from Madrid later in the day tended to keep the market flat up to the close of business. Portuguese stock was also quoted a shade lower than yesterday.

The only variation in the share market was a slight improvement in Brighton shares, which closed at 20 1/2; Blackwall, 19 1/2 to 20 1/2; Croydon, 12 1/2 to 13 1/2; Brighton, 12 1/2 to 13 1/2; Southampton 10 1/2 to 11 1/2; Great Western, 12 1/2 to 13 1/2; New Midland, 25 1/2 to 26 1/2; Colonial Bank, 30 1/2 to 31 1/2. The foreign exchanges maintained the rates of last post-day, and there was a fair amount of business done.

**LATEST PRICES OF IRISH DEBENTURES.**—3 per Cent. Consols, 101 1/2 to 102 1/2; 4 per Cent. Consols, 101 1/2 to 102 1/2; 5 per Cent. Consols, 101 1/2 to 102 1/2; 6 per Cent. Consols, 101 1/2 to 102 1/2; 7 per Cent. Consols, 101 1/2 to 102 1/2; 8 per Cent. Consols, 101 1/2 to 102 1/2; 9 per Cent. Consols, 101 1/2 to 102 1/2; 10 per Cent. Consols, 101 1/2 to 102 1/2; 11 per Cent. Consols, 101 1/2 to 102 1/2; 12 per Cent. Consols, 101 1/2 to 102 1/2; 13 per Cent. Consols, 101 1/2 to 102 1/2; 14 per Cent. Consols, 101 1/2 to 102 1/2; 15 per Cent. Consols, 101 1/2 to 102 1/2; 16 per Cent. Consols, 101 1/2 to 102 1/2; 17 per Cent. Consols, 101 1/2 to 102 1/2; 18 per Cent. Consols, 101 1/2 to 102 1/2; 19 per Cent. Consols, 101 1/2 to 102 1/2; 20 per Cent. Consols, 101 1/2 to 102 1/2; 21 per Cent. Consols, 101 1/2 to 102 1/2; 22 per Cent. Consols, 101 1/2 to 102 1/2; 23 per Cent. Consols, 101 1/2 to 102 1/2; 24 per Cent. Consols, 101 1/2 to 102 1/2; 25 per Cent. Consols, 101 1/2 to 102 1/2; 26 per Cent. Consols, 101 1/2 to 102 1/2; 27 per Cent. Consols, 101 1/2 to 102 1/2; 28 per Cent. Consols, 101 1/2 to 102 1/2; 29 per Cent. Consols, 101 1/2 to 102 1/2; 30 per Cent. Consols, 101 1/2 to 102 1/2; 31 per Cent. Consols, 101 1/2 to 102 1/2; 32 per Cent. Consols, 101 1/2 to 102 1/2; 33 per Cent. Consols, 101 1/2 to 102 1/2; 34 per Cent. Consols, 101 1/2 to 102 1/2; 35 per Cent. Consols, 101 1/2 to 102 1/2; 36 per Cent. Consols, 101 1/2 to 102 1/2; 37 per Cent. Consols, 101 1/2 to 102 1/2; 38 per Cent. Consols, 101 1/2 to 102 1/2; 39 per Cent. Consols, 101 1/2 to 102 1/2; 40 per Cent. Consols, 101 1/2 to 102 1/2; 41 per Cent. Consols, 101 1/2 to 102 1/2; 42 per Cent. Consols, 101 1/2 to 102 1/2; 43 per Cent. Consols, 101 1/2 to 102 1/2; 44 per Cent. Consols, 101 1/2 to 102 1/2; 45 per Cent. Consols, 101 1/2 to 102 1/2; 46 per Cent. Consols, 101 1/2 to 102 1/2; 47 per Cent. Consols, 101 1/2 to 102 1/2; 48 per Cent. Consols, 101 1/2 to 102 1/2; 49 per Cent. Consols, 101 1/2 to 102 1/2; 50 per Cent. Consols, 101 1/2 to 102 1/2; 51 per Cent. Consols, 101 1/2 to 102 1/2; 52 per Cent. Consols, 101 1/2 to 102 1/2; 53 per Cent. Consols, 101 1/2 to 102 1/2; 54 per Cent. Consols, 101 1/2 to 102 1/2; 55 per Cent. Consols, 101 1/2 to 102 1/2; 56 per Cent. Consols, 101 1/2 to 102 1/2; 57 per Cent. Consols, 101 1/2 to 102 1/2; 58 per Cent. Consols, 101 1/2 to 102 1/2; 59 per Cent. Consols, 101 1/2 to 102 1/2; 60 per Cent. Consols, 101 1/2 to 102 1/2; 61 per Cent. Consols, 101 1/2 to 102 1/2; 62 per Cent. Consols, 101 1/2 to 102 1/2; 63 per Cent. Consols, 101 1/2 to 102 1/2; 64 per Cent. Consols, 101 1/2 to 102 1/2; 65 per Cent. Consols, 101 1/2 to 102 1/2; 66 per Cent. Consols, 101 1/2 to 102 1/2; 67 per Cent. Consols, 101 1/2 to 102 1/2; 68 per Cent. Consols, 101 1/2 to 102 1/2; 69 per Cent. Consols, 101 1/2 to 102 1/2; 70 per Cent. Consols, 101 1/2 to 102 1/2; 71 per Cent. Consols, 101 1/2 to 102 1/2; 72 per Cent. Consols, 101 1/2 to 102 1/2; 73 per Cent. Consols, 101 1/2 to 102 1/2; 74 per Cent. Consols, 101 1/2 to 102 1/2; 75 per Cent. Consols, 101 1/2 to 102 1/2; 76 per Cent. Consols, 101 1/2 to 102 1/2; 77 per Cent. Consols, 101 1/2 to 102 1/2; 78 per Cent. Consols, 101 1/2 to 102 1/2; 79 per Cent. Consols, 101 1/2 to 102 1/2; 80 per Cent. Consols, 101 1/2 to 102 1/2; 81 per Cent. Consols, 101 1/2 to 102 1/2; 82 per Cent. Consols, 101 1/2 to 102 1/2; 83 per Cent. Consols, 101 1/2 to 102 1/2; 84 per Cent. Consols, 101 1/2 to 102 1/2; 85 per Cent. Consols, 101 1/2 to 102 1/2; 86 per Cent. Consols, 101 1/2 to 102 1/2; 87 per Cent. Consols, 101 1/2 to 102 1/2; 88 per Cent. Consols, 101 1/2 to 102 1/2; 89 per Cent. Consols, 101 1/2 to 102 1/2; 90 per Cent. Consols, 101 1/2 to 102 1/2; 91 per Cent. Consols, 101 1/2 to 102 1/2; 92 per Cent. Consols, 101 1/2 to 102 1/2; 93 per Cent. Consols, 101 1/2 to 102 1/2; 94 per Cent. 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Consols, 101 1/2 to 102 1/2; 118 per Cent. Consols, 101 1/2 to 102 1/2; 119 per Cent. Consols, 101 1/2 to 102 1/2; 120 per Cent. Consols, 101 1/2 to 102 1/2; 121 per Cent. Consols, 101 1/2 to 102 1/2; 122 per Cent. Consols, 101 1/2 to 102 1/2; 123 per Cent. Consols, 101 1/2 to 102 1/2; 124 per Cent. Consols, 101 1/2 to 102 1/2; 125 per Cent. Consols, 101 1/2 to 102 1/2; 126 per Cent. Consols, 101 1/2 to 102 1/2; 127 per Cent. Consols, 101 1/2 to 102 1/2; 128 per Cent. Consols, 101 1/2 to 102 1/2; 129 per Cent. Consols, 101 1/2 to 102 1/2; 130 per Cent. Consols, 101 1/2 to 102 1/2; 131 per Cent. Consols, 101 1/2 to 102 1/2; 132 per Cent. Consols, 101 1/2 to 102 1/2; 133 per Cent. Consols, 101 1/2 to 102 1/2; 134 per Cent. Consols, 101 1/2 to 102 1/2; 135 per Cent. Consols, 101 1/2 to 102 1/2; 136 per Cent. Consols, 101 1/2 to 102 1/2; 137 per Cent. Consols, 101 1/2 to 102 1/2; 138 per Cent. Consols, 101 1/2 to 102 1/2; 139 per Cent. Consols, 101 1/2 to 102 1/2; 140 per Cent. 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